

MEMORIAL HOSPITAL ISSUE

DELAWARE STATE MEDICAL JOURNAL

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SYMPOSIUM

ON

CARDIOVASCULAR DISEASE

Complete Contents on Page iv

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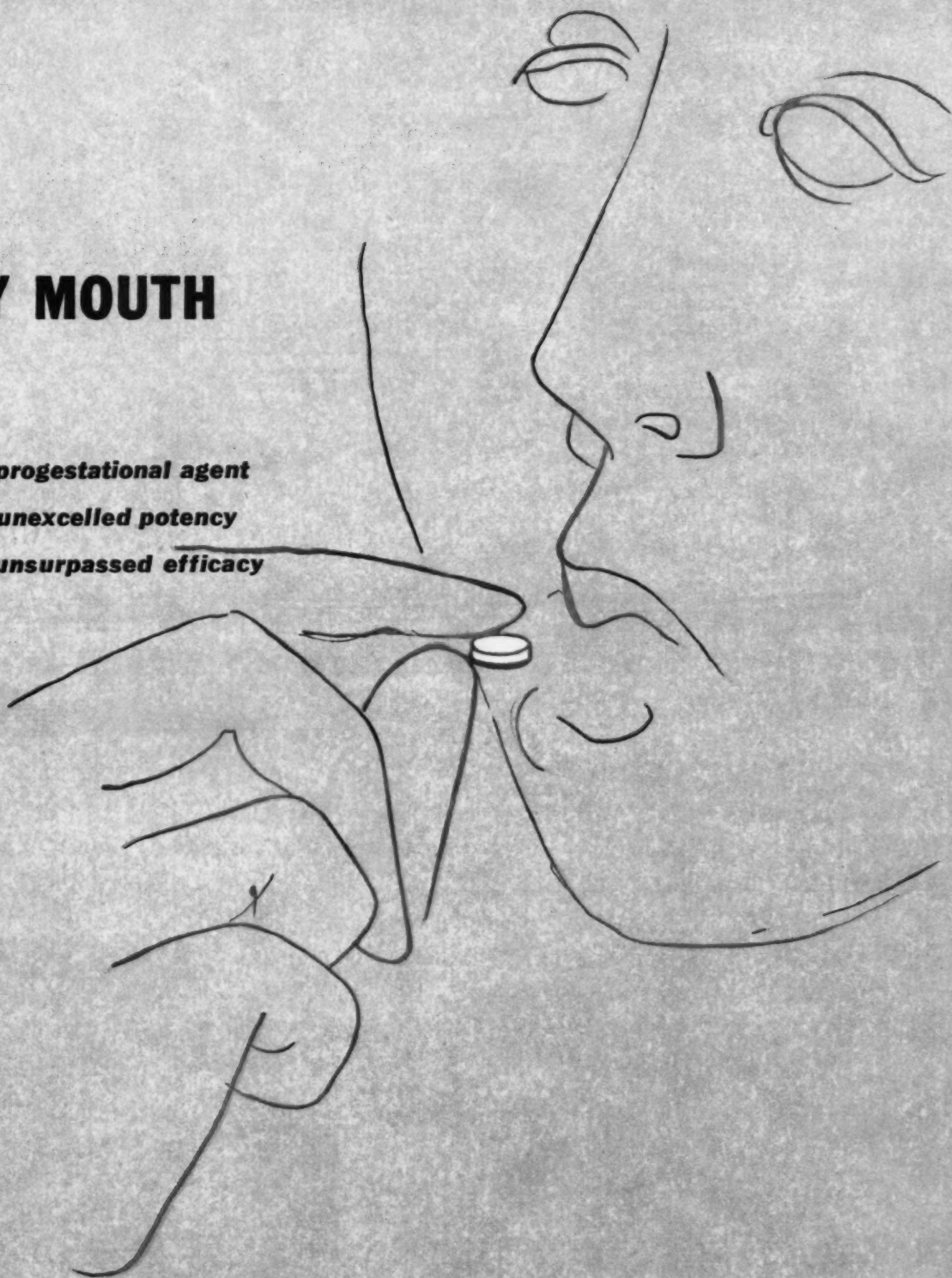
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CONTENTS

RECENT DEVELOPMENT IN THE DIAGNOSIS AND TREATMENT OF CARDIOVASCULAR DISEASE	277
NOTES ON CARDIAC CATHETERIZATION, <i>Stanley Verbit, M.D.</i>	278
RADIOLOGIC ASPECTS OF CARDIAC CATHETERIZATION, <i>Paul A. Shaw, M.D.</i>	280
THE SURGERY OF CARDIOVASCULAR DISEASE, <i>John J. Reinhard, Jr., M.D.</i>	284
SURGERY FOR THE CARDIAC PATIENT, <i>A. Henry Clagett, Jr., M.D.</i>	286
USE OF RADIOACTIVE IODINE IN EVALUATION AND TREATMENT OF CARDIAC PROBLEMS, <i>Robert W. Frelick, M.D.</i>	288
DIABETES DETECTION WEEK	293
MENTAL REHABILITATION OF THE PATIENT WITH MYOCARDIAL INFARCTION, <i>Anthony R. Tortora, M.D.</i>	298
MEDICAL COURT CASES	300
EDITORIALS	301
REPORT OF INTERNATIONAL MEDICAL MEETING, <i>Allen C. Wooden, M.D.</i>	304

INDEX OF ADVERTISERS

Abbott Laboratories	Insert, xiii, xiv, xv, xvi, xvii
Ames	xx
Astra Pharmaceutical Products	xl, xli, xlii
Ayerst Laboratories	lii
Baynard Optical Co.	liv
Borden Co.	lii
Burroughs Wellcome & Co.	Insert
Cappeau's Pharmacy	lvi
Coca-Cola Co.	lviii
Corn Products Sales Co.	viii
Eckerd's Drug Stores	xi
Fraim's Dairies	lii
Freihofer's Bread	lvi
General Electric	lx
Kayser-Roth Co.	xxx
Lakeside Laboratories	v
Lederle Laboratories	x, xii, Insert, xxi, xxxiv, xl, liv, lxi
Lilly, Eli & Co.	l, xxxii
Merck, Sharp & Dohme	ix, xix, xxiv, xxvi, xxvii, xxxviii, xxxix, lviii, lix
Merkel, John G.	x

Montgomery, J. A.	x
Parke Davis & Co.	ii, iii
Parke, L. H. Co.	liv
Pfizer Laboratories	l, li
Physicians Casualty & Health Asso.	xl
Reed & Cornick	lvi
Riker Laboratories	lxiii
Robins, A. H. Co.	xi, xxix, xxxvii
Roeig, J. B. Co.	xviii, xxii, xxiii, liii
Schering Corp.	xxx, xlvi, xlvii
Searle, G. D. & Co.	vii, xxxiii
Schiffelin & Co.	xlvi
Smith Dorsey Co.	lxiv
Smith, Kline & French	xxxviii
Squibb, E. R. Co.	xlvi
Today's Health	xlvi
Upjohn Co.	xlii, xliii
Vale Chemical Company	xxxv
Wallace Laboratories	vi, xxv, xlv, lv
Winthrop	xlvi, lxi
White Laboratories	xlv

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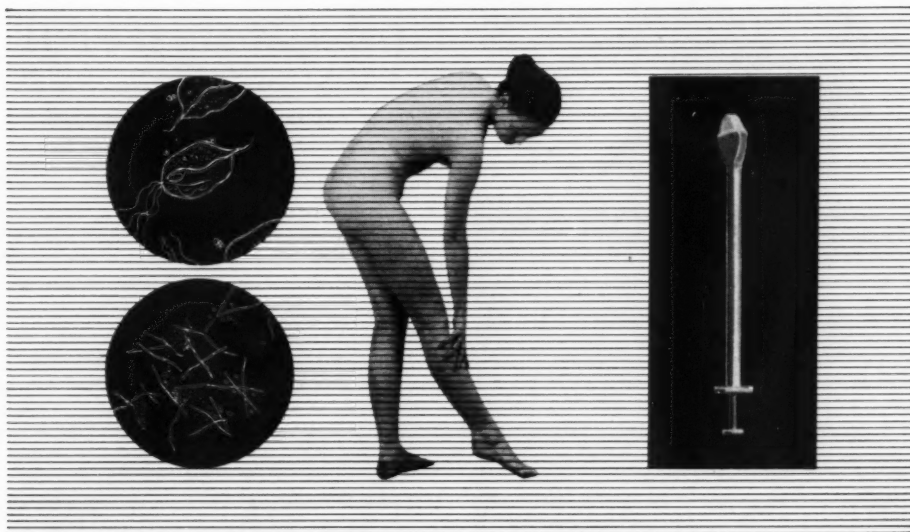
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1. Friedlander, H. S.: The role of atarazics in cardiology. *Am. J. Card.* 1:395, March 1958.

2. Shapiro, S.: Observations on the use of meprobamate in cardiovascular disorders. *Angiology* 8:504, Dec. 1957.



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1. Davis, C. H.: Trichomonas Vaginalis Infections: A Clinical and Experimental Study, J.A.M.A. 157:126 (Jan. 8) 1955.

2. Pitt, M. B.: Leukorrhea, Causes and Management, J.M.A. Alabama 25:182 (Feb.) 1956.

3. Lang, W. R.: Recent Advances in Vaginitis, Philadelphia Med. 51:1494 (June 15) 1956.

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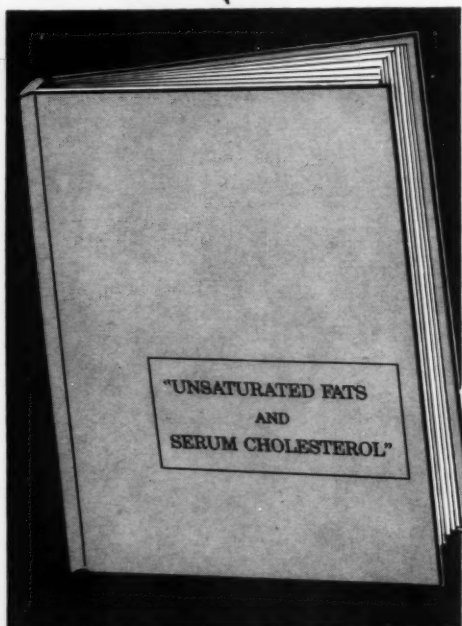
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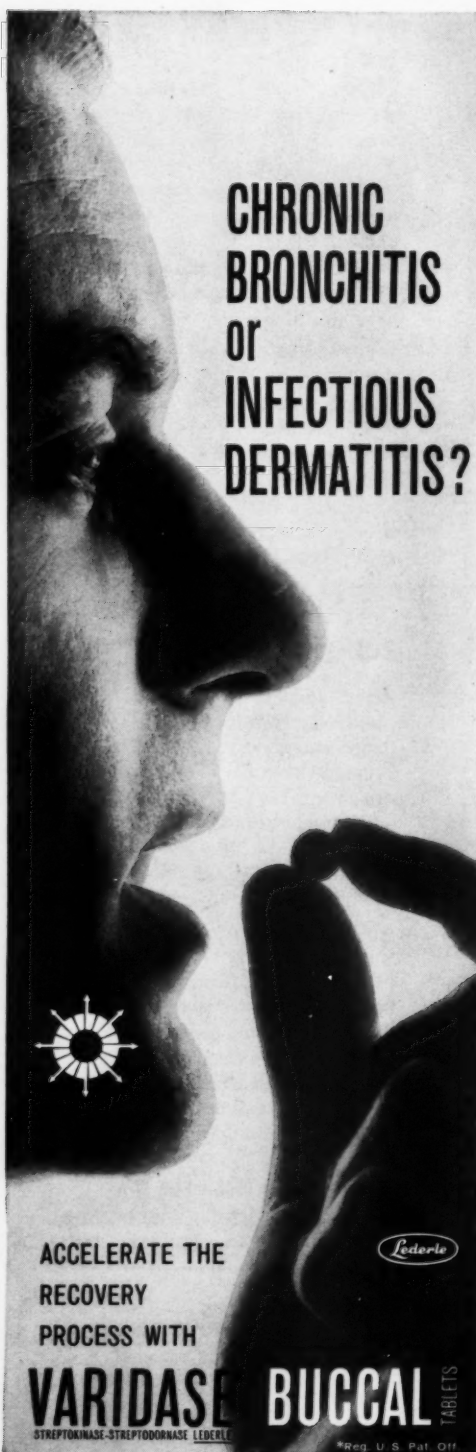
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Herniated disc	39	25	13	—	1
Ligamentous strains	8	4	4	—	—
Torticollis	3	3	—	—	—
Whiplash injury	3	2	1	—	—
Contusions, fractures, and muscle soreness due to accidents	5	3	2	—	—
STUDY 3⁵		"excellent"			
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Acute fibromyositis	8	8	—	—	—
Torticollis	1	—	—	1	—
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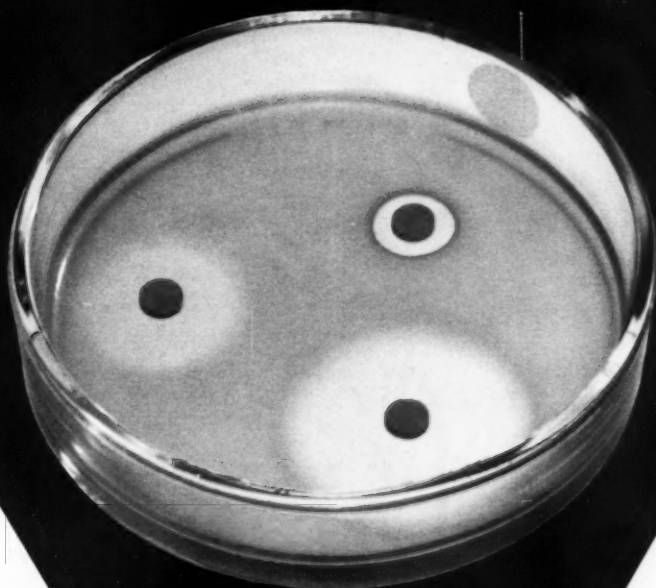
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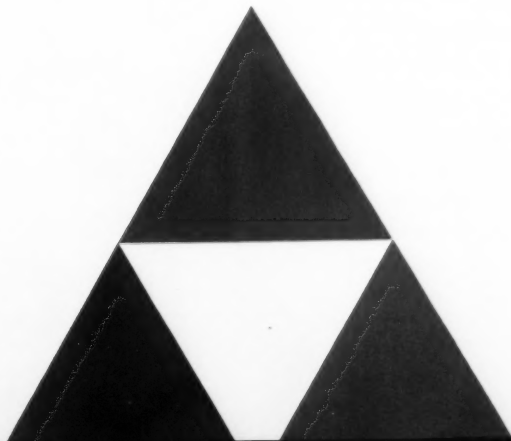
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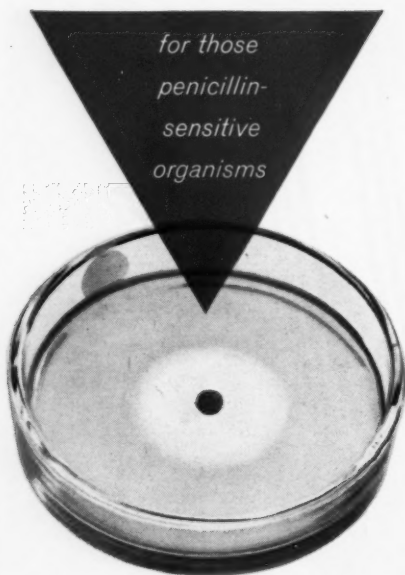


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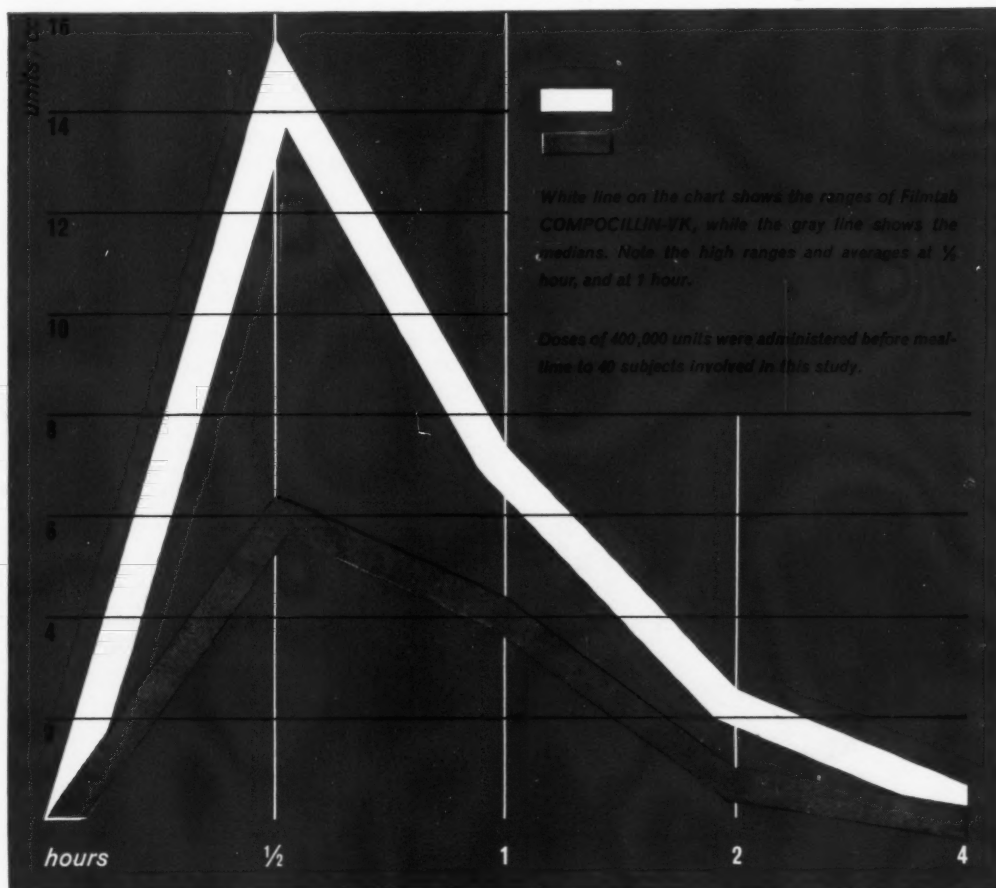
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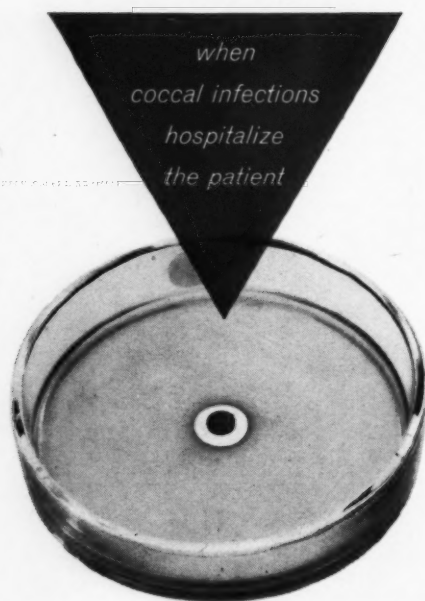
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1. Antibiotics Annual, 1956-'57, p. 706.
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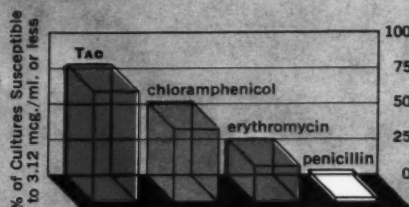
effective ...

CLINICAL RESULTS	adults	children	all Staph Infections
Cured	172 (80%)	148 (89%)	71 (88%)
Improved	28 (13%)	8 (5%)	7 (9%)
Failure	17 (7%)	11 (6%)	3 (3%)

Types of infecting organisms: The majority of identified etiologic microorganisms were *Staph. aureus* and *Staph. albus*. Tao has its greatest usefulness against organisms such as: staphylococci (including strains resistant to other antibiotics), streptococci (beta-hemolytic strains, alpha-hemolytic strains and enterococci), pneumococci, gonococci, *Hemophilus influenzae*.

even against resistant staph^{1,2}...

Per cent of "antibiotic-resistant" epidemic staphylococci cultures susceptible to Tao, erythromycin, penicillin and chloramphenicol.¹



well tolerated ...

REACTIONS:

(a) adults
 Total—9.2%
 (20 out of 217)
 Skin rash—1.4%
 (3 out of 217)
 Gastrointestinal—
 7.8% (17 out of 217)

(b) children
 Total—0.6%
 (1 out of 167)
 Skin rash—none
 Gastrointestinal—
 0.6% (1 out of 167)

There was complete freedom from adverse reactions in 94.5% of all patients. Side effects in the other 5.5% were usually mild and seldom required discontinuance of therapy.

plus ...

stability in gastric acid • rapid, high and sustained blood levels • high urinary concentrations • outstanding palatability in a liquid preparation.

Dosage and Administration: Dosage varies according to the severity of the infection. For adults, the average dose is 250 mg. q.i.d.; to 500 mg. q.i.d. in more severe infections. For children 8 months to 8 years of age, a daily dose of approximately 30 mg./Kg. body weight in divided doses has been found effective. Since Tao is therapeutically stable in gastric acid, it may be administered at any time, without regard to meals.

Supplied: Tao Capsules—250 mg. and 125 mg.; bottles of 60. Tao for Oral Suspension—1.5 Gm.; 125 mg. per teaspoonful (5 cc.) when reconstituted; unusually palatable cherry flavor; 2 oz. bottle.

References: 1. English, A. R., and Fink, F. C.: *Antibiotics & Chemother.* (Aug.) 1958. 2. English, A. R., and McBride, T. J.: *Antibiotics & Chemother.* (Aug.) 1958. 3. Wennersten, J. R.: *Antibiotic Med. & Clin. Therapy* (Aug.) 1958. 4. Celmer, W. D., et al.: *Antibiotics Annual 1957-1958*, New York, Medical Encyclopedia, Inc., 1958, p. 476.

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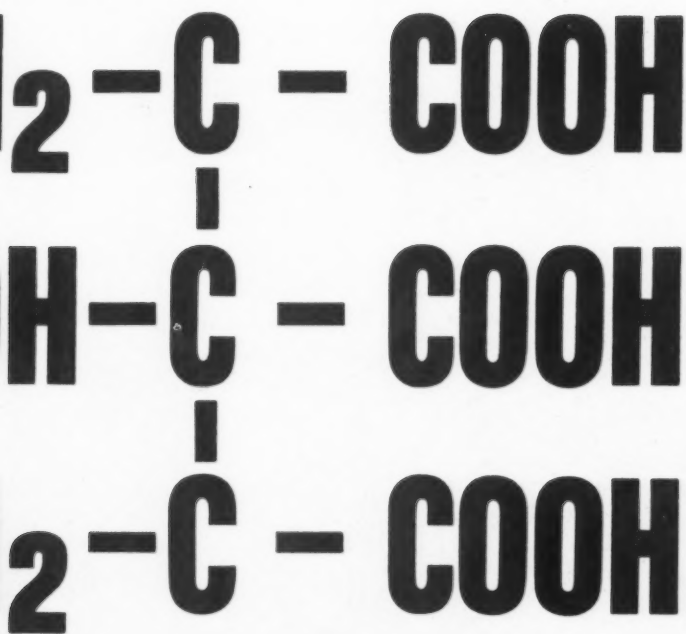
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Supplied: tiny pink-and-blue tablets, bottles of 25 and 100. Bonadoxin Drops in 30 cc. dropper bottles.

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6 months to 2 years	1.5 to 2 cc.	
2 to 6 years	3 cc.	
adults and children over 6 years	1 teaspoon (5 cc.)	

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References: 1. *Drugs of Choice* 1958-1959. St. Louis, C. V. Mosby Company, 1958, p. 347.
 2. Goldsmith, J. W.: *Minnesota Med.* 40:99 (Feb.) 1957.



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- 9, April 1956. 179. Friedman, A. P.: The treatment of chronic headache with mepro-
Use of tranquilizers in the treatment of headache. Am. Pract. & Digest Treat. 8:94,
M.A. 163:1111, March 30, 1957. 182. Friedman, H. T. and Marmelzat, W. L.: Adverse
meprobamate (Miltown)- a clinical study. Am. J. Psychiat. In press, 1957. 184. Gibbs,
Relaxant effects of meprobamate in disabilities resulting from musculoskeletal and
453, July 1956. 186. Gillette, H. E.: The effect of meprobamate on cerebral palsy.
ers and purpura hemorrhagica (Correspondence). J.A.M.A. 161:96, May 5, 1956. 188.
An evaluation of meprobamate in the treatment of alcoholism. Ann. New York Acad. Sc.
"Habit-forming" individuals (Queries and Minor Notes). J.A.M.A. 163:515, Feb. 9,
e. Ohio M. J. 52:1306, Dec. 1956. 192. Hollister, L. E., Elkins, H., Hiler, E. C.
ad. Sc. 67:789, May 9, 1957. 193. Hollister, L. E., Stannard, A. N. and Drake, C. F.:
194. Holoubek, J. E., Thomas, C. C. and Seure, J.: Toxic reaction to 2-methyl-
95. Karlick, M. A large (acute) dose of meprobamate (Miltown). Canad.
robamate (Miltown) in surgery of eye, ear, nose and throat. Eye, Ear, Nose & Throat.
tranquilizer, meprobamate -- its use for pain associated with cancer, preliminary
obamate (Correspondence). J.A.M.A. 161:644, June 16, 1956. 19. Kugelmass, I. M.:
P. Clin. 168:223, Jan. 1956. 206. Laphier, W. L.: Post-addiction Correspond-
obamate in postoperative surgical care. Ann. New York Acad. Sc. 67:814, May 9, 1957.
J. Chronic Dis. 10:112, Feb. 1957. 207. Lemere, F.: Habit-forming drugs. North-
J. J.A.M.A. 160:1431, April 21, 1956. 208. Lemere, F.: Habit-forming properties of
56. 206. Lemere, F.: Pamine (Sparine) in the treatment of psychiatric disorders.
A. Arch. Dermat. & Syph. 74:377, March 1957. 208. Levan, M. E. and Levan, C. F.: Un-
LeVan, P. and Wright, E. T.: Use of tranquilizers in diseases of the skin -- A
Clinical evaluation of meprobamate in disturbed and prepsychotic children. Ann. New
.: Ineffectiveness of Diamox in the treatment of childhood epilepsy. Pediatrics 17:
in treatment. Southwestern Med. 37:428, July 1956. 213. McGee, R. R.: Drug-reaction
town in the treatment of chronically ill psychiatric out-patients. Pennsylvania M. J.
ychiatric Clin. 56:117, March 1957. 214. M. G., Boyd,
blication, 1957. 217. Osinski, W. A.: Treatment of anxiety states with meprobamate
Osinski, W. A.: Treatment of anxiety states with meprobamate. Ann. New York Acad.
spondence). J.A.M.A. 163:489, Feb. 9, 1957. 220. Felner, L.: Meprobamate (Correspond-
of six ataraxics in neuropsychiatric patients. Read at the American Psychosomatic
robamate, "tranquilizing drug with muscle relaxant properties in psychotic cases, in
1957, pp. 125-131. 223. Pennington, V. M.: A comparative study of six ataraxics in
on, V. M.: A two-year comparative study of ataraxics in neuropsychiatric patients. J.
n (meprobamate) with psychotic patients. Am. J. Psychiat. 114:257, Sept. 1957. 226.
7. 227. Pennington, V. M.: Addiction to meprobamate questioned (Correspondence). North-
in convulsive and related disorders. J.A.M.A. 161:1010, July 14, 1956. 229. Pevey, J.
with phenobarbital, meprobamate and two similar experimental agents. J. Pharmacol. &
iltown) for the treatment of emotional disorders. Am. Pract. & Digest Treat. 7:1573,
tion. North. 9:44, April 1956. 230. Rushia, E. L.: Meprobamate in anx-
956. 233. Rushia, E. L.: Preliminary report on the use of meprobamate for pre-anes-
S. B.: The effects of ward tension on the quality and quantity of tranquilizer uti-
The value of muscle relaxant disorders of muscle tone. Ann. New York Acad. Sc.
Hypotensive mode following treatment with meprobamate (Correspondence). Lancet 2:
g drug: use of meprobamate (Miltown) in the treatment of anxiety states. J.A.M.A.
new tranquilizer. Clin. & Experimental Psychopath. 7: March 1957. 239. Sen-
ode Island M. J. 9:18, Dec. 1956. 240. Shahan, A. and Hirs, S.: Three cases
C.: "Mood" therapy in the aged. Differential approach to reduce anxiety. M. Times
P.: Meprobamate (Miltown) in rheumatic diseases. J.A.M.A. 163:535, Feb. 16, 1957.
spasm due to meprobamate. J.A.M.A. 163:535, Feb. 16, 1957. 241. Wallace,
eriatrics Soc. 5:152, Feb. 1957. 245. Smith, R. T.: The newer drugs in the treat-
adelphia, March, 1957, pp. 353-358. 246. Sokoloff, O. J.: Meprobamate (Miltown) as
, Oct. 1956. 247. Steffen, C. G., Chervin, M. and Van Vranken, B.: Reaction follow-
Stewart, R. H.: The use of tranquilizing drugs in gynecology. West. J. Surg. 64:
land J. Med. 256:354, Feb. 21, 1957. 250. Thal, N.: Premedication for electroshock
7:52, Feb. 1956. 251. Thimann, J.: Newer drugs in the treatment of acute alcoholism
ng, Atlanta, Georgia, Dec. 28, 1955. 252. Thimann, J. and Gauthier, J. W.: Miltown
17:19, March 1956. 253. Tucker, W. I.: The place of Miltown in general practice.
l evaluation of meprobamate therapy in a chronic schizophrenic population. Am. J.
. Surg., Gynec. & Obst. 104:233, Feb. 1957. 256. Turvey, S. E. C.: Meprobamate for
63, June 1956. 257. van der Erve, J. and Childs, D. R.: Meprobamate reactions. J.
cas (The new ataractic drugs). Prensa méd. argent. 43:2667, Aug. 31, 1956. 259. Wein-

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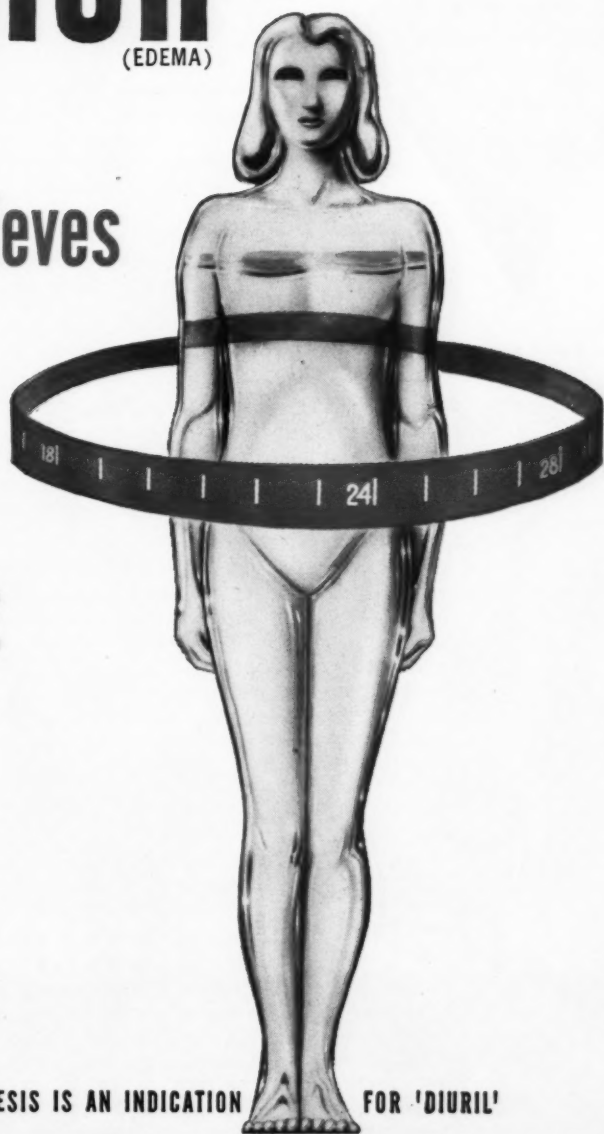
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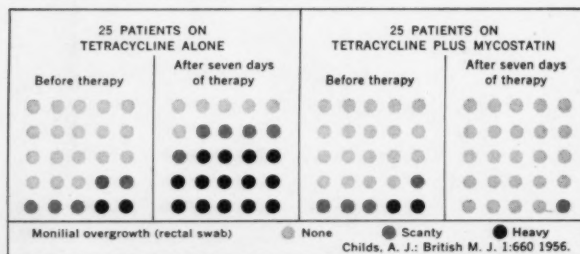
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References:

1. Blanchard, K., and Ford, R. A.: Clin. Med. 3:961, 1956.
2. Cass, L. J., and Frederik, W. S.: 2:844, 1951.
3. Hayes, R. W., and Jacobs, L. S.: Dis. Chest 30:441, 1956.
4. Schwartz, E., Levin, L., Leibowitz, H., and McGinn, J. P.: Am. Pract. & Digest Treat. 7:585, 1956.

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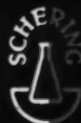
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(1) Marangoni, B. A.: Am. Pract. & Digest Treat. 8:1959, 1957.

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*Issued Monthly Under the Supervision of the Publication Committee
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OCTOBER, 1958

NUMBER 10

SYMPOSIUM:

Recent Developments in the Diagnosis and Treatment of Cardiovascular Disease

Introduction

Twenty years ago leading heart specialists were content to make a diagnosis of congenital heart disease. To be more specific was purely academic inasmuch as there was no definitive treatment for the condition.

Twenty years ago when an anesthetist was confronted by the sudden onset of tachycardia in his patient, he played the law of averages and treated the patient for the most common form of tachycardia. Sometimes he was wrong.

Twenty years ago a patient with thyrotoxicosis was offered a choice of three methods of therapy: a major surgical operation, medical treatment or x-ray treatment. The latter two were not always satisfactory and the first was sometimes impossible due to the condition of the patient.

Twenty years ago there was little to offer the patient suffering with angina pectoris except nitroglycerine. True, certain groups were advocating removal of the thyroid gland but this was a major surgical operation and the patient was known to have serious heart disease.

The Memorial Hospital has been privileged in the past to do its share of medical

pioneering in the state of Delaware. The Carpenter Memorial Clinic, established in 1935, and the Chest Conference, established several years later, have proven their usefulness by the test of time.

Once again the Memorial Hospital is proud to assume its share of medical progress.

Cardiac catheterization and angiocardiology, procedures once performed only in medical teaching centers, are now being done in many non-university hospitals. Memorial Hospital is equipped to carry out these tests. Indeed, the image amplifier in the x-ray department is a piece of equipment found in few hospitals in this country.

The oscilloscope or operating room cardioscope is now standard equipment. It is used in any instance where there is any doubt regarding the past or present status of the patient's cardiovascular system.

The establishment of an isotope laboratory provided the latest in the diagnosis and treatment of diseases of the thyroid gland and, indirectly, of the heart.

The following articles summarize the data of these recent advances.

NOTES ON CARDIAC CATHETERIZATION

STANLEY VERBIT, M.D.*

Cardiac catheterization is one of the most accurate methods used in the diagnosis of cardiovascular and pulmonary diseases. It is an important supplement to the information obtained from all other studies of the cardiac patient: a detailed history, complete physical examination, electrocardiogram, x-ray studies and angiocardiology.

Because of recent developments in surgical techniques, performing open heart surgery with the use of heart-lung machines, the classification of surgically correctable heart abnormalities has been expanded. Almost any anatomical or valvular defect may be considered for operative correction but accurate and early diagnosis of the exact nature of the cardiac defect becomes increasingly important.

Catheterization of patients with cardiac problems generally can be undertaken without great difficulty or danger of mortality. The study usually is carried out on a fluoroscopic table. During the entire period of the study, the patient is continuously monitored with an oscilloscope to detect the development of any ectopic rhythm or other change in the electrocardiogram. After the catheter is introduced into the heart manipulation of the catheter through the heart chambers is done under fluoroscopic guidance.

In right heart catheterization the catheter is introduced into a vein draining into the median basilic system. The left arm is preferred to the right because manipulation of the catheter within the heart chamber is easier with this approach. In children, where the arm veins are not satisfactory, the saphenous vein at the femoral area may be used.

The usual plan of study is to collect data (oxygen samples and pressure readings) in a rapid, uninterrupted manner from the cardiac chambers. The usual procedure is to wedge the catheter into the pulmonary arterioles and collect the data in the following order: main branches of the pulmonary artery, the truncus of the pulmonary artery, outflow tract of the right ventricle, mid-portion of the right ventricle, tricuspid area of the right ventricle, tricuspid area of the right auricle, right auricle, superior vena cava and inferior vena cava. If, during the catheterization, the catheter enters any chamber of the left heart, pulmonary vein of the aorta, blood specimens and pressures are obtained out of sequence.

Because of the technical surgical advances in acquired valvular and congenital heart disease, information is required from areas in the heart which cannot be supplied by right heart catheterization. A technique of catheterizing the left side of the heart is used so that pressure tracings of the left atrium, left ventricle and aorta can be recorded. A modification of the technique of Fisher is most commonly used, employing a right posterior intercostal approach to introduce a needle directly into the left auricle. A polyethylene catheter is then threaded through the needle into the auricle, the left ventricle and the aorta. Data are obtained from the left heart chambers and the regions adjacent to the aortic and mitral valves.

Complications observed during or after completion of the cardiac catheterization usually are of a minor character when rigid attention is given to observing the details of the technique. Development of abnormalities of cardiac rhythm is the most important complication. Premature contractions are often noted on the monitoring

*Assistant, Department of Medicine

electrocardiogram during manipulation of the catheter within the heart. These are recorded when the tip is passed through the tricuspid valve or lies in contact with the intraventricular septum and promptly subside when the position of the catheter is changed. All types of transient cardiac arrhythmias have been recorded. The most serious arrhythmia is that of ventricular premature contractions. When these are encountered and the abnormal stimulation is not promptly corrected, runs of ventricular tachycardia can result. The prompt withdrawal of the catheter from the irritable focus will prevent this complication if early recognition of the ectopic beats or runs of ventricular premature contractions are noted. Catheterization should not be carried out unless adequate electrocardiographic monitoring is available.

Other infrequent complications reported are: venous thrombosis of the vein through which the catheter is passed, blood loss and air embolism. In left heart catheterization hemopericardium and asymptomatic pneumothorax can occur.

The purpose of passing a catheter into the heart chambers is to obtain data on intracardiac and intravascular pressures as well as the oxygen content of the blood within the chambers studied. Once the catheter is introduced into the desired cardiac chamber continuous intracardiac pressures are recorded. The patterns of the pressure curve and the range of pressure varia-

tion within the heart chamber studied serve to identify areas of abnormally high and low pressures, to define intracardiac valvular blocks, to aid in locating abnormal communications between the right and left heart and to help in identifying the location of the catheter tip while blood gas determinations are sampled.

The content of oxygen within the cardiac chambers is determined from a gas analysis of mixed venous blood taken from the right side of the heart and, where abnormal communications are present, from the left side of the heart and aorta. Samples of venous blood usually are taken from the branches of the pulmonary artery, main pulmonary artery, right ventricle and right auricle. Abnormal communications between the structures of the right heart circulation and those of the pulmonary vein, left auricle, left ventricle and aorta produce a left to right shunt. A sample of blood will show a higher oxygen content than that of mixed venous blood. When a dynamic right to left shunt exists contamination of the pulmonary venous blood can be recognized by arterial blood gas analysis.

The recent advances in surgical techniques make it important to diagnose as early and correctly as possible all cardiovascular lesions. Cardiac catheterization is the most important and essential study to obtain all possible pathologic, physiologic, and anatomic information.

RADIOLOGIC ASPECTS OF CARDIAC CATHETERIZATION

PAUL A. SHAW, M.D.*

In the early development of cardiac catheterization high radiation levels were encountered and made the examination difficult. Patient exposure was high and personnel protection was cumbersome.

The advent of the image amplifier introduced a factor of 600 x in the procedure enabling the operator and radiologist to follow the catheter adequately with the minimum radiation hazard. This high increase in visibility allows the operator to work without dark adaptation and shortens the time of the total procedure.

Technically, a large amount of apparatus is needed. X-ray equipment must be adequate in power, the image amplifier must be part of the x-ray machine and cinefluorographic equipment is valuable. A cardioscope must be used to monitor the cardiac system. A transducer apparatus connected to a two channel recorder is used to measure pressures. All this equipment must be checked for mal-function before the examination is started. A necessary piece of equipment is a central electrical grounded plate, so that no high frequency interference occurs in any of the electrical machines. This plate is a 12 inch square of heavy brass or copper with a large flexible wire and a battery clip attached. The plate has four brass bolts along three edges. The clip is attached to a good electrical ground on the x-ray machine. All ground leads from the other equipment are then attached by clips to the brass bolts.

Use of the image amplifier does not require dark adaptation except for the radiologist. The surgeon can work in a well lighted room. Saline drip mechanisms are necessary and frequently troublesome. No particular apparatus is perfect for this function. Use of a plastic foam mat on the

x-ray table gives considerable relief to the patient.

The team consists of the cardiac surgeon and physicians to run and monitor the pressure writer and the cardioscope. The x-ray group consists of the radiologist and at least two x-ray technicians.

The procedure is straight forward and should proceed without major difficulty. Blood samples for gas analysis require careful technique. Fluoroscopy time should be measured. At the rate of 1 milliamperere per second, ample time is available for moderately prolonged procedures without causing excessive radiation. Several procedures were monitored for personnel doses and at 1 MA. levels no significant dose was recorded at 2 and 4 foot distances. The dose to the patient is restricted by shutter closure and low millamperage. Patient doses vary but do not exceed 6 to 8 R. for 10 minute fluoroscopy. The above figure represents an air dose level and is not actual energy absorbed. A factual dose per cubic centimeter of tissue would be much less. Secondary distribution lateral to the patient can hardly be measured 18 inches away. At table side the maximum level was 2 milliroentgens within 6 inches of the patient. A lead rubber fluoroscopic shield cut this level to zero. It can be seen that radiation exposure is minimal when compared with the importance of the examination.

Cinefluorographic film can be made using the cardiac catheter as a probe. Sizes and irregularities of the chambers can be roughly outlined by making a kinetic record film of the catheter in different positions. Cardio angiographic opacification is somewhat less dramatic when performed through a small catheter in a cardiac chamber. High density opaques are required. This method

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may be required by special circumstances however and valuable information may be obtained. Cardiac opacification through the catheter with the tip in the superior vena cava gives better opacification since dilution is lessened and a visible dye charge is formed en bloc.

Rapid injection by a remote controlled gas-fired syringe is vital to proper opaque bloc formation. Both cinefluorography and cassette changers are satisfactory for making the records on films. Radiation levels are necessarily higher because of the filming and are approximately equal in each type of procedure.

An angiocardio-gram can be carried out as a separate examination using a large ureteral catheter type of tube inserted through an anterior cubital vein and with its tip at the most distal level of the superior vena cava. Use of the cassette changer allows the films to be examined within 15 to 20 minutes. The entire procedure should require 30 to 40 minutes.

The above outline of the x-ray participation in cardiac diagnosis has not included many technical details. It may be stated that the procedure outlined is safe, effective and reasonable in cost. Radiation danger is controlled and kept to a minimum. Our experience has been satisfactory in all the cases carried out at Memorial Hospital to date. Our effort is based on the slogan of "maximum information with minimum radiation." In the future, with refinements of technique, an even better radiation level may be obtained.

The following case report is used as a description of the manner in which information concerning a cardiac situation can be built up by proper use of x-ray examinations.

This patient was a negro male, age forty-one with a complaint of weakness. The initial x-ray examination consisted of standard PA and lateral chest films; from this examination we were able to determine that the cardiac volume, as seen by the cardiac shadow on the films, was definitely increased. We were unable to determine any chamber abnormality and we were un-

able to determine any indication of the ability of the cardiac muscle to contract.

The second examination was ordinary fluoroscopy. The information gained with ordinary fluoroscopy was not much greater than what we had gained by the standard chest examination; however, the image amplifier examination gave us a very adequate determination of the ability of the cardiac musculature to contract. We were able to see that the large heart did not have a very forceful impulse. We were also able to see that the impulse seemed to be less efficient towards the base of the left ventricle. On the right side, we were able to see that the force of the contraction of the right ventricle was less in degree near the base of the right ventricle.

In the initial examination, we saw a double shadow on the right side of the spine. (Figure 1.) Under the image ampli-

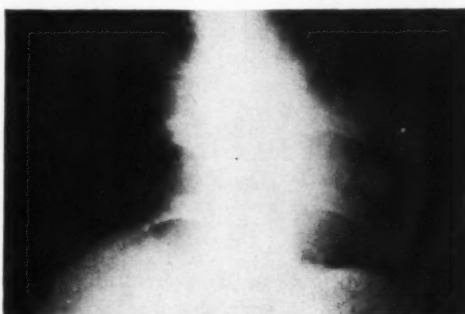


FIGURE 1

PA Chest Film — showing double shadow on right side of heart.

fier, we were able to determine that this was part of the cardiac system and that it showed a contractile ability compatible with an auricle. We took a few feet of cinefluorographic film, making thereby a permanent record of the kinetic ability of this heart. In this film we were able to see the non-synchronous contraction of ventricles, when compared with the abnormal right sided shadow which we found in the first chest examination; again, this gave us some indication that the shadow was auricular.

The last examination was an angiocardio-gram. This was done quickly and efficiently. A catheter was inserted into the anti-cubital vein and its tip was placed proximal

to the large tributaries and the superior vena cava was used as a reservoir for collecting the opacifying media. This examination was done using the Sanchez-Perez cassette changer, with a remote control syringe which is gas fired and the whole examination was automatic, once the syringe was energized. We secured twelve films in less than eight seconds. This opacification procedure showed us very definitely that the abnormal shadow on the right side of the spine in the original chest examination was a thickened wall of the left auricle. The auricle was not increased in volume or size, but showed a very definite thickening of its wall. (Figure 2.)



FIGURE 2

Opacification technique—demonstrates that the abnormal shadow in the double shadow is left auricle.

From the facts built up in this series of examinations, it was able to be inferred that this individual probably had had a pericardial effusion and pericarditis at some time in the recent past and that we were now dealing with a fibrinous pericarditis, which was limiting muscle contraction, particularly near the base of the ventricular chambers. This situation could not be outlined in any single examination but did require a progressive sequence of examinations in the form outlined above.

An overall plan, such as was formulated in this individual, gives maximum information. Decisions made from individual reports of a single examination are frequently misleading unless they are corroborated or supplemented by other examinations. The situation in this individual was such that one item of information was obtained from one examination, another item was then ob-

tained from another type of examination and by the time the four examinations had been completed, the situation had reached a diagnostic level and the circumstances of the cardiac disability could be fairly well outlined.

The same procedure applies in many diagnostic problems. The original standard examination should be used as a beginning, but the results of this examination should merely be considered as preliminary information and a carefully formulated plan of subsequent examinations may allow the conclusion to arise at a fairly accurate diagnosis. These examinations should be correlated as to their sequence. The initial examination of a P.A. and lateral film of the chest seems to be a very satisfactory beginning. Opacification of the esophagus with oblique films may be the second part of this first phase of the examination. Careful cardiac fluoroscopy, particularly with the image amplifier, seems to be a very satisfactory method of examination, since with the image amplifier, the examiner's eyes are sharply limited to a moderate size segment of the cardiac musculature and an accurate determination of its ability and its action can be obtained.

The cinefluorographic examination is a satisfactory and accurate record of the fluorographic examination by the image amplifier. In other words, it constitutes a kinetic record of cardiac motion and muscular contraction.

The angiocardigram, done in the manner outlined above, was rather simple. The patient had no reaction. The danger of overloading the right ventricle was greatly diminished by using the superior vena cava as a reservoir for the opacifying material. The rate at which the films were taken was estimated, but in this case seemed to be entirely adequate. The resulting angiocardigram gave the needed information, with a small degree of radiation exposure to the patient. Total exposure involved in this examination and in the previous examinations spread out over a period of fourteen to twenty days does not seem to be excessive. The exact measurement of the air dose of radiation is not particularly impor-

tant, since each area that is exposed was not always the same area. In image amplification fluoroscopy, the level is small. In cinefluorography, the radiation level is moderately higher, but the machine is under constant motion and consequently no single square centimeter is given the maximum amount of radiation.

In the angiographic examination, an area corresponding to a 10 x 12 film does receive a moderate degree of radiation dosage; but, again, in an individual of this age, with a disease process of sufficient importance for this investigation, the amount of radiation received becomes insignificant from the point of view of general health.

Secondary radiation exposure is frequently considered to be significant, but present day measurements show secondary radiation within a patient's body is of small import.

The general situation in cardiac diagnosis seems to be of the type that requires a well planned radiologic approach, using careful determination of examination, which will give maximum information; and, secondary correlation of the information from each examination should be reserved until all the examinations are completed. A complete review of all the facts will give a very satisfactory degree of diagnostic information.

THE SURGERY OF CARDIOVASCULAR DISEASE

JOHN J. REINHARD, JR., M.D.*

For many years reparative surgery of congenital cardiovascular disease has been well established. Division and ligation of patent ductus arteriosus, the resection and restoration of the normal caliber of the aorta in coarctation of the aorta, are all widely known and accepted. Thoracic surgical centers perform these procedures routinely.

Interchamber defects such as interauricular and interventricular septal defects, associated with other abnormalities or present alone, require heart and lung machines and open cardiac surgery. These procedures are best performed in teaching medical centers.

Surgery in acquired cardiovascular disease, however, has achieved universal acceptance and surgical correction of deformed valves has been particularly successful in the treatment of mitral stenosis. It is not known generally that the first resection of small portions of the stenotic mitral orifice was performed by Cutler in 1922. Souttar, in 1925, first used today's approach through the left auricular appendage with the finger dilating the mitral valve, producing splitting of the commissures.

For twenty years Cutler, Sweet, Bland, and Smithy continued their efforts in the surgery of the mitral valve, contributing greatly to our knowledge in this field. But no practical results were obtained until the late 1940's. At this time Harken and Bailey independently reported their experience, repeating Souttar's technique with instrumental and finger fracture of the stenosed commissures. In spite of the original high mortality the procedure became widely accepted and, as more and more suitable cases were presented to the cardiac surgeon, the mortality rate fell and the operation was widely accepted.

Today, after ten years of pioneer effort, patients suffering from the cicatricial end results of rheumatic fever can be rehabili-

tated and restored to useful occupations. Many resume completely normal activity. Much of the original scepticism has abated and most practitioners of general medicine have at least one patient who has been restored to a useful existence by mitral commissurotomy.

Indications for surgery are now comparatively clear. The ideal candidate is one who presents pure mitral stenosis and beginning symptoms of cardiopulmonary dysfunction as evidenced by dyspnea on exertion and fatigue out of all proportion to his physical activity. As soon as the practitioner has demonstrated to his own satisfaction that the patient's symptoms are progressive, even though these may be alleviated by medical measures, the patient is a candidate for consideration of valvuloplasty. Surgery for mitral stenosis at such an early stage would carry an infinitely lower mortality and much cardiac disability would be obviated.

In experienced hands serious postoperative complications are rare and the over-all mortality rate is well below 5 per cent. The most serious complication following the surgical relief of stenosis is postoperative emboli from either dislodged clots from the left auricle in patients who are fibrillating, or dislodged particles from the calcific valve leaflets.

At the Memorial Hospital fifteen patients have undergone mitral commissurotomy; fourteen have had excellent postoperative results. In this series one patient had a major complication of brain damage secondary to hypotension which was experienced in the operative period before the valve could be split. Thirteen of the fifteen patients had no complications and were discharged, on the average, 21 to 25 days following commissurotomy. All of these patients have had excellent postoperative results and have returned to their former occupations.

*Associate, Department of Surgery

The surgery of mitral insufficiency has had less successful results. However, when minimal to moderate insufficiency is associated with mitral stenosis it frequently is possible, on splitting the commissures, to obtain some increased pliability of both the valve leaflets and the fused chordae tendinae and the mitral insufficiency may be greatly benefited. However, when the latter condition predominates in the mechanical disability of the valve open-heart surgery again seems to be the procedure of choice.

The acquired heart disease of the great vessels, such as luetic and arteriosclerotic aneurysms, are today being attacked more and more vigorously as lateral resections are possible in luetic aneurysms, and even resection of the aneurysm with the use of plastic prostheses. These procedures are now being routinely done at the Memorial Hospital.

The greatest challenge to the cardiovascular surgeon is the large group of patients who have had impaired myocardial circulation because of coronary artery disease. Many clinics originally reported glowing results in internal mammary ligation for this condition. However, the results do not tend to bear out the original reports. There may be some benefit but this has not been completely demonstrated.

Revascularization procedures, such as the internal mammary implant of Vineburg, seem to show greater promise. In this procedure the internal mammary artery is implanted into a tunnel created in the myocardium, and it is possible to demonstrate collateral circulation that develops following this procedure. Many of these patients seem to be benefited and certainly, in selected cases, good results are obtained. The Beck procedure seems to produce some revascularization of the heart and abrading of the epicardium, either with instrumental means or the use of powdered asbestos or irritating particles in the pericardium, also seems to give symptomatic improvement. It is in this field that the greatest challenge to the cardiovascular surgeon lies, inasmuch as this is the greatest reservoir of cardiac disability.

CASE REPORT

The following case illustrates the application of the latest methods of diagnosis and treatment in congenital heart disease.

The patient, a 25-year-old girl, was first studied in November 1956, because of complaints of shortness of breath on exertion for two to three years and chest pain for one year. She presented a grade 2 blowing diastolic murmur heard best at the second interspace. Fluoroscopic examination revealed a slight enlargement of the right heart with prominent pulmonary vascular markings. The ECG was normal and the hemoglobin was 16 gms. No definite diagnosis was made but intra-arterial septal defect was suspected.

She was restudied in May of 1957, because of a rash, joint pains, and fever which subsequently reached 102°. Her murmur was now variable in quality and intensity between grade 1 and 2 in the pulmonary area. Transient conjunctival petechiae and a questionable enlarged spleen were noted. However, repeated blood cultures were negative. CRPA was negative and her anti-streptolysin titer was normal. She was given a course of penicillin which was followed by slow lysis of her symptoms and fever.

Although her condition had returned to normal, the murmur remained and became louder. Cardiac catheterization was performed in January 1958, because of the possibility of her having subacute bacterial endocarditis engrafted on a patent ductus arteriosus. O₂ content of the blood was:

RA	13.3
RV	14.1
low in PA	15.5
high in PA	15.8

This represented a rise in O₂ saturation of 10% just beyond the pulmonary valve. All pressures were normal. The impression was that of a small patent ductus. Because of the previous febrile episode, surgery seemed indicated. In February 1958, thoracotomy was performed and a patent ductus 1 cm. long and 4 mm. in diameter was found. This was divided and sutured without incident. Postoperatively, she has done well.

SURGERY FOR THE CARDIAC PATIENT

A. HENRY CLAGETT, JR., M.D.*

Advances in surgery and anesthesia, particularly the latter, in the past fifteen years have changed older concepts regarding surgery on the cardiac patient. This subject does not concern itself with cardiac surgery which is discussed elsewhere but with the patient who has heart disease in whom extracardiac surgery is indicated.

One of the largest groups of patients in this category are those who have had a myocardial infarction and need abdominal surgery such as cholecystectomy or hernia repair. If the surgical condition is an emergency, such as an acute appendix or abscess of the gall-bladder, little can be done about selecting the proper time for surgery. In elective surgery, however, the first principle is to wait at least six months after the acute myocardial infarction. If, during this period, there have been no complications such as myocardial failure or coronary insufficiency, the patient should be at a good surgical risk.

At times we have been forced to operate on patients who had had severe myocardial infarcts long before the six months period had expired. One patient was admitted to the hospital for treatment of cancer of the esophagus and developed myocardial infarction while awaiting surgery. The problem in this case was whether it was more dangerous to proceed with surgery or to wait and allow more chance for the malignancy to metastasize. A compromise was effected and the patient was operated on four weeks after having had the myocardial infarct. The patient survived.

The two most common complications in patients undergoing surgery are coronary insufficiency and cardiac arrhythmias. The first is avoided by keeping the patient well oxygenated and preventing any fall in blood

pressure. The second is avoided by choice of an anesthetic agent that will not be irritable to the myocardium. Monitoring the cardiac rhythm has been facilitated in the past few years by use of the operating room oscilloscope. The use of this will be discussed later.

Patients with valvular heart disease in the absence of congestive heart failure have withstood anesthesia well except those with disease of the aortic valve. In such cases, the same precautions should be taken as with patients who have myocardial damage. The great danger is coronary insufficiency due to improper filling of the coronary arteries.

Patients with hypertensive cardiovascular disease in general will tolerate surgery well. It is imperative to take positive action to see that the blood pressure is not lowered significantly. This is to prevent coronary insufficiency and renal failure.

The operating room oscilloscope has been used in this hospital for almost three years and has been used with over 500 patients. It is an instrument which allows continuous visualization of the electrocardiogram at all times. Furthermore, if a permanent record is desired, it can be taken simultaneously. This instrument is of greatest value with the patient who develops tachycardia while undergoing a surgical procedure. (Figure 1.) In a patient who has had a myocardial infarction, the onset of ventricular tachycardia not only is common but also is of grave prognostic significance. It is essential that this arrhythmia be differentiated from an auricular tachycardia, in which instance the prognosis is not so bad and, from the practical standpoint, the treatment is exactly the opposite of that for ventricular tachycardia. With the oscilloscope, the diagnosis of the tachycardia can be made at

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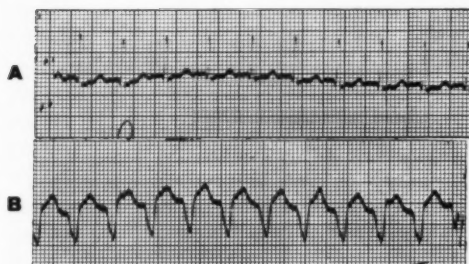


FIGURE 1

- A—Tachycardia of supraventricular origin.
B—Ventricular tachycardia. It is apparent that these arrhythmias are diagnosed at a glance. This is most important during surgical operation because the prognosis and the treatment of each is entirely different from that of the other.

a glance and proper treatment instituted. In several patients, change in the amplitude and direction of the terminal ventricular complex (T wave) has given warning of impending or actual coronary insufficiency. Without any doubt, the use of this instrument has been responsible for saving a number of lives.

The above are but a few of the factors which have made surgery and the administration of an anesthetic agent a relatively safe procedure for the cardiac patient. This has been a great stride forward but it is a small sample of the tremendous advances which we have a right to expect in the next decade.

USE OF RADIOACTIVE IODINE IN EVALUATION AND TREATMENT OF CARDIAC PROBLEMS

ROBERT W. FRELICK, M.D.*

Radioactive iodine has become a valuable tool in the diagnosis and treatment of many cardiac problems. Its chief value diagnostically is for the recognition of underlying hyperthyroidism in patients with heart disease. In five years of experience with the Isotope Laboratory at The Memorial Hospital we have been continually impressed by the number of patients whose primary complaints were those of cardiac failure or irregularity but who, on routine uptakes, were found to have evidence of hyperthyroidism. Re-evaluation of the patient often revealed other clinical findings suggestive of this diagnosis, but often only one or two of the salient features were noted such as tachycardia, auricular fibrillation, a goiter, or a slight tendency to nervousness. Frequently the usual signs and symptoms of hyperthyroidism were "masked," particularly in patients over 50 years of age. A typical picture of Grave's disease was seldom seen. While the difficulty in diagnosing hyperthyroidism in the cardiac patient has been emphasized in the past, it seems likely that many of these patients were missed until the advent of radioactive iodine since the basal metabolism test often would be of no help in cardiac problems.¹ We feel that even our usual 24-hour uptake study of radioactive iodine does not pick up many cases. In the last year or two we have been interested in 6-hour and 72-hour uptakes, 72 hour PBI conversion ratios, and more recently in an in-vitro technique for determining thyroid function.² In some patients all these plus protein-bound iodine and cholesterol studies are necessary to determine a diagnosis. In still other patients the only criterion we have for establishing diagnosis is a response to therapy.

Probably, from the point of view of

treatment, I-131 therapy has been most dramatic for those classified as thyrocardiac patients who have cardiac decompensation, angina, or tachycardia, without response to usual therapy. They have shown almost uniform improvement after treatment with I-131. Our experience in this clinic includes 18 patients of this type. Of these patients 13 showed response. (See table 1) One patient, an 80-year-old woman who had been treated for hyperthyroidism with propylthiouracil for a number of years, was given I-131 at a time when she was be-

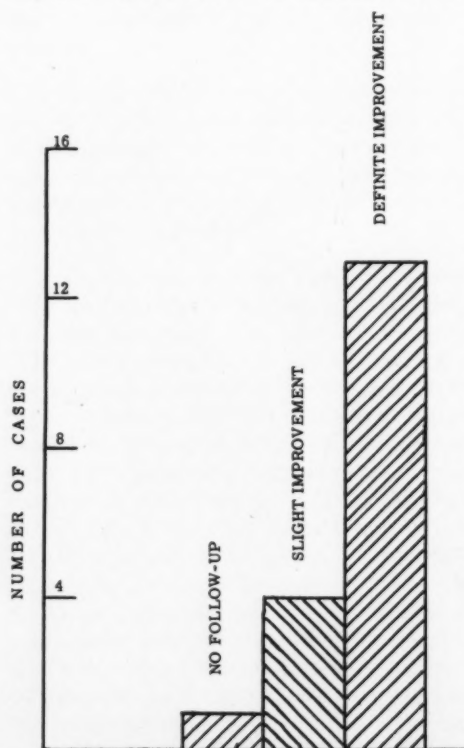


TABLE 1

Thyro-Cardiac Patients I 131 Therapy. No difference in age or sex between groups — ages range 41-81 yrs.

*Attending Chief, Department of Medicine

coming toxic and could no longer be controlled by the usual medical means. She was given a small initial dose but went into thyroid storm with increased cardiac rate and fever and did not survive. As a rule, however, this is not a problem. We have chosen to treat some of our patients with propylthiouracil or similar drugs prior to the administration of I-131 in an attempt to avoid a thyroid storm after I-131 therapy. Others, depending on their age and clinical condition, have been treated with I-131 directly. Some patients of the latter group have been treated with propylthiouracil and/or inorganic iodine following the administration of the radioactive iodine in an attempt to avoid the slight hyperthyroidism often noted one to two weeks after therapy. Not all authorities agree that this is of value. Our patients have been followed closely and many have been hospitalized for observation during this period.

The technique for doing these studies, evaluating the results, and deciding upon the therapy dose is not included in this paper. Any patient who is a diagnostic problem is discussed in Therapy Conference, and no patient is given therapy without first being discussed in Therapy Conference with cardiologists and internists.*

The actual administration of the I-131 to the patient is a simple procedure. At the present time we are using radioactive iodine in capsule form for the diagnostic studies so that all the patient has to do is swallow the capsule. For therapy, the iodine is administered in a tasteless liquid which the patient drinks like water. The average patient who comes in for a diagnostic work-up is given the I-131 one day and returns in 24 hours for the counting procedure. If a 6-hour uptake is desired, the time of administration is so set that the count can be made on the same day. Counting is a relatively brief test. Our laboratory uses a scintillation counter instead of a Geiger counter. The patient has no sensation from the I-131 or from the counting procedure which seldom takes more than 10 or 15 minutes. Some patients are scanned to determine the location and size of the thyroid

gland and to find any toxic nodules or occult nodules which may be suspicious of tumor. For this scanning the patient lies on a table underneath the scintillation scanning device and the activity in the gland is mapped out automatically without any subjective sensation. If a 72 hour PBI conversion ratio is desired the patient is asked to return 72 hours after the original diagnostic dose to have a 10cc. sample of oxalated blood taken.

There are several "hazards" which affect the accuracy of I-131 tests. In patients who are having routine uptake studies any previous administration of iodine, even that in vitamins, may interfere with the results. The same is true of propylthiouracil and several other drugs which will block the uptake of radioactive iodine. If the patient has been taking propylthiouracil, he may have a higher than usual uptake shortly after it is discontinued. If he has been taking thyroid extract, he may have an elevated uptake several weeks after it is stopped although it eventually will be depressed. We do not like to do radioactive iodine studies on patients who have had diagnostic gall-bladder or renal studies within three to six months. If the patient has been taking thyroid, we like to have him discontinue it for two months although occasionally we may get a good uptake in a patient who has been off it for only one month. A patient who has had previous surgery or I-131 therapy also may pose problems in evaluating the uptake response. In our cardiac patients mercurial diuretics often may be misleading. Furthermore, patients who have congestive failure with edema frequently have a slow uptake of radioactive iodine that is not a true reflection of the thyroid status.

We have presented a brief list of the variables which may influence uptake studies and which have encouraged us to see if we can adapt the in-vitro technique for wider use. In the in-vitro technique the patient is never exposed to radioactivity. If the in-vitro technique is desired,² blood may be drawn from the patient at any time, preferably prior to the administration of the radioactive iodine. This has the advantage

* Members of the Therapy Committee: Drs. A. Henry Clagett, Jr., J. Richard Durham, John Egan, Robert W. Frelick, and Leonard P. Lang.

that organic iodines given as therapy or in diagnostic x-ray studies such as IVP and cholangiograms will not interfere with the study. The blood is incubated with I-131 iodinated tri-iodothyronine solution and the percentage of uptake in the red cells is determined. This appears to be a reflection of thyroid function. Theoretically, this has the advantage of measuring the thyroid metabolism at the cell level. Otherwise, I-131 uptake is only a measure of the amount of iodine accumulated by the thyroid gland. Usually this is a function of thyroid activity but in some instances such as cretinous goiters or in Hashimoto's stroma there may be a high uptake. Also, where the gland is iodine starved there may be a high uptake in a normal gland or in a gland which is actually sub-normal in activity. Therefore, it is important to know as much as possible about the clinical status of each patient in order to best interpret the uptake results. The procedure is without injury to the patient and it is particularly useful for the patient who is afraid of the BMR breathing apparatus. Nervousness itself does not influence the result. Some patients who have a chemical PBI that is increased because they have been given previous iodine will be found to have a decreased I-131. Therefore, the chemical PBI and the I-131 uptake may supplement each other in discovering patients who have been taking iodides.¹

The radioactivity involved in the diagnostic study is minimal. The amount of iodine given is not enough to have any physiological effect. We try to restrict the I-131 therapy to patients above the ages of 35-40 even in the hyperthyroid non-cardiac patients. Above this age group there is little fear of complications such as development of thyroid cancer. Clinical experience with I-131 in the treatment of thyroid disease is now some 18 years old and so far there has been no evidence in humans that I-131 is a carcinogenic agent. Naturally there is not particular concern about genetic influence in the older age group. Occasionally there will be a patient who may develop a thyroid storm with I-131 therapy. More frequently, a week or two after therapy the patient will have a little swelling in the neck or may develop a mild cough or hoarseness

that may last for another week. There appear to be no other side effects or long-term radiation hazards. The question has been raised whether patients made hypothyroid or myxedematous will tend to become arteriosclerotic. Some studies have indicated that as the cholesterol rises there is a decreased turnover rate so that if the development of arteriosclerosis is increased by the hypothyroid state it is at a very slow rate. In most of our patients this would be of no clinical significance since many have such far advanced disease that without therapy they would not last long.

In 1954 Blumgart⁴ pointed out that radioactive iodine was of value for euthyroid patients with intractable angina and failure. For years, surgical thyroidectomy or anti-thyroid drugs had been used for certain patients to decrease the thyroid function. Radioactive iodine has proved to be a better method.³ Since there is no surgical risk, the patients can be made hypothyroid and the degree of hypothyroidism can be controlled by the administration of thyroid. This induction of hypothyroidism is easier and more certain with I-131 than with the anti-thyroid drugs. The rationale for treating the intractable cardiac patient by this method is obvious since cardiac output is geared to metabolic demand. By inducing a hypothyroid state the cardiac requirements of the decreased metabolic state may be met by a heart that has been impaired by organic heart disease. The etiology of the heart disease is of secondary importance.

Not every patient who is intractable to routine therapy is a candidate for I-131 therapy. Those most likely to be helped have congestive failure, but also have some evidence of cardiac reserve with a demonstrated ability to improve under intensive medical management. The patient with a rapidly progressive heart disease, or the terminal patient, is not likely to survive the period between therapy and the onset of hypothyroidism. Therefore, a well stabilized patient is ideal. The Therapy Committee has thrashed through many such problems. It is not always easy to decide whether a patient has had sufficient trial of conservative measures for supplemental I-131. There

seems to be little value in giving the drug to every terminal cardiac patient. Naturally, the patient who is already myxedematous or hypothyroid is not likely to benefit from treatment. Therefore, a pre-treatment evaluation including an I-131 uptake study is necessary to determine if the patient is a candidate for therapy. Since therapy often induces myxedema, a patient must be willing and able to follow through with his physician if supplemental low doses of thyroid medication become necessary. Cooperation from the patient is essential. Since the euthyroid gland normally takes up less radioactive iodine than the hyperthyroid gland, euthyroid patients require more radioactive iodine to irradiate the gland enough to induce hypothyroidism or myxedema. Blumgart and others have emphasized the desirability of inducing myxedema, and then controlling most of the undesirable effects of the myxedema with low doses of thyroid. Others have tried to give just enough radioactive iodine to induce hypothyroidism without myxedema. We have used both courses of therapy and are not yet certain in our own minds as to the best method of approach.

Some of our best results have been in patients who have been treated with I-131 in sub-myxedema (hypothyroid) doses. Unfortunately, this hypothyroidism is usually transient, not more than 4 to 12 months, and is followed by a return of the euthyroid state. This means that the patient may then need further I-131 therapy. On several occasions patients have not been followed as carefully as we would wish, have not returned for follow-up after showing initial improvement, or have gradually slipped into more trouble without the physician or patient realizing that he is losing the hypothyroidism. On the other hand, some patients definitely have been improved by this temporary respite and have been able to maintain improvement after returning to a euthyroid state. The latter group of patients, in contrast to the myxedematous group who may be very difficult to control with small doses of thyroid, suggest that the ideal approach would be to give sub-myxedema treatment to a patient who can be carefully followed. This ideal is difficult

to achieve. Our own experience includes many patients who died shortly after therapy. We were dealing with a "bad" group of cardiac patients, and some of our choices were probably patients who were too terminal to benefit from therapy. Other patients who showed no definite improvement have lived and are doing relatively well. It is difficult to know whether patients who show no great improvement but who are still living 6 months to several years later would have been so well if they had not had the I-131 therapy. Some have had to be treated more than once. Patients with intractable angina are frequently considered to be better candidates for I-131 therapy than those with intractable failure, although I think that some of the deaths we have seen in patients with intractable angina suggest that we delayed their treatment too long. Since angina is more subjective and more difficult to evaluate we find this group of patients difficult to choose. We feel that with our increasing experience we can achieve results (see table II) similar to those of Blumgart's survey.⁴ Of his patients with angina pectoris, 40% had ex-

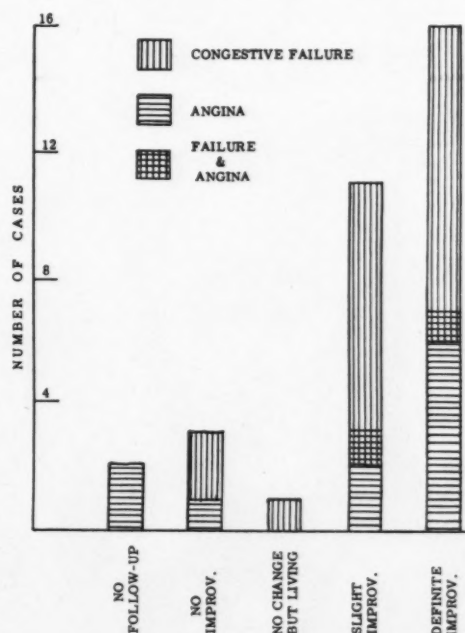


TABLE 2

Cardiac Patients—I 131 Therapy. No difference in ages or sex between groups—ages range 41-81 yrs.

cellent results, 35% were good, and 25% were not worth while. Of his patients with congestive failure, 20% were reported as excellent, 40% good, 40% not worth while. (See table 2.)

In summary, I-131 is a valuable agent in the diagnosis of hyperthyroidism, particularly that which is not clinically apparent in cardiac patients. The cardiac patient with unexplained tachycardia, fibrillation and failure may be an unrecognized hyperthyroid. In addition, I-131 is of value therapeutically both for patients who are recognized initially as toxic thyro-cardiacs, and for those whose thyrocardiac state is only picked up incidentally. In these patients I-131 gives dramatic results because they will improve by just bringing them

down to a euthyroid level. Also, a group of euthyroid cardiac patients with intractable failure and angina have been definitely benefited by inducing hypothyroidism with I-131.

REFERENCES

1. Beirwaltes, W. H.: The value of radioactive iodine uptake and protein-bound iodine estimations in the diagnosis of thyrotoxicosis, *Ann. Int. Med.* 44:40, 1956.
2. Hamolsky, M. W., Stein, M., and Freedberg, A. S.: The thyroid hormone-plasma protein complex in man. II. A new in-vitro method for study of "uptake" of labelled hormonal components by human erythrocytes, *J. Clin. Endocrinol.* XVII:33, 1957.
3. Jaffe, H. L., Rosenfeld, M. H., Pobirs, F. W., and Stuppy, T. J.: Radioiodine in treatment of advanced heart disease, *J.A.M.A.* 151:716, 1953.
4. Blumgart, H. L., Freeberg, A. S., and Kurland, G. S.: Treatment of incapacitated euthyroid cardiac patients by producing hypothyroidism with radioactive iodine, *New England J. Med.* 245:83, 1951.
5. Fields, T., and Seed, L.: *Clinical Use of Radioisotopes*, Chicago, The Year Book Publishers, 1957.
6. Beirwaltes, W. H., Johnson, P. C., and Solari, A. J.: *Clinical Use of Radioisotopes*, Philadelphia, W. B. Saunders Company, 1957.

DIABETES DETECTION WEEK

Finding unknown diabetics and guiding them to medical care is a year round effort culminating in the drive during Diabetes Week. This drive is sponsored by the American Diabetes Association, which was founded by and is composed of physicians. The Association works through 42 local Affiliate Associations and through nearly 900 Committees on Diabetes organized within State and County Medical Societies.

The year-round effort is featured by an annual, nation-wide Diabetes Week, during which as many persons as possible are screened for diabetes.

IT IS IMPORTANT THAT ALL PRACTICING PHYSICIANS COOPERATE IN THE DIABETES DETECTION PROGRAM.

Helping to detect diabetes is one way of giving better medical care to more people. Out of every 160 patients that come into a physician's office, one may be an unknown diabetic. The physician who wants to improve the care of his patients will want to detect diabetes as early as possible in the people for whom he is medically responsible.

THE SIMPLEST TESTS FOR DETECTING DIABETES ARE AS FOLLOWS:

Get a urine specimen two hours after a full meal containing plenty of starch and test the specimen for sugar. Use one of these simple tests:

BENEDICT'S QUALITATIVE TEST
Place 2½ cc. (half a teaspoonful) of Benedict's Solution in a test tube. Add 4 drops of urine and shake well. Place the tube in boiling water for five minutes. Apply the color comparison chart to the liquid to determine the result. A cloudy green, brown, yellow, orange or red color means sugar in the urine. If it remains a clear blue, this will mean no sugar and a negative result.

CLINITEST. Place 5 drops of urine in a test tube. Rinse the dropper and add

10 drops of water. Next put in a Clinitest tablet. The mixture will boil; after it stops, wait 15 seconds. Then shake the tube and compare the color of the fluid with the color chart. Any shade of blue means a negative result — no sugar in the urine. Any other color means that sugar is present.

SUGAR TEST DENCO. Place Sugar Test Denco powder (a little less than a crushed aspirin) on a piece of white paper. Drop one drop of urine on the powder. If the color of the powder changes to black, the sample is positive — it contains a measurable amount of sugar. Disregard other color changes.

Caution: Blotting paper should not be used for the white sheets described above because it absorbs the urine before any reaction can take place.

CLINISTIX. Dip test end of Clinistix in urine (or moisten with a drop of urine, or pass through urine stream). Observe at exactly one minute. Negative: no blue color develops. Positive: moistened end turns blue.

TES-TAPE. Tear an inch and a half of tape from the dispenser, dip it into the specimen, remove and wait one minute. Negative: no color change. Positive: moistened end turns to some shade of green.

DREYPAK. This is produced by the American Diabetes Association for use particularly in mass screening. The individual takes the strip home, dips it quickly into a specimen of urine, lets it dry, and returns it — by mail or otherwise. The tester suspends the strip for one minute in a pan of boiling Benedict's Solution. If the filter paper turns cloudy green, yellow, orange or red, there is sugar in the urine. (Packs of 20 to 30 strips, held by a plastic clothespin, can be tested.)

Some of these testing materials may be available without charge through the local Committee on Diabetes. Please call Olympia 4-3310 after October 15. It is advisable

to use clean sterile bottles to obtain the specimens if they are collected outside the physician's office.

WHAT LABORATORY FINDINGS SUGGEST THE PRESENCE OF DIABETES?

1. The presence of any amount of glucose in the urine
2. Blood sugar values (expressed in mg. per 100 cc. blood) above the following levels should make one alerted to the presence of diabetes:
 - A. Venous blood sugar:
 1. Folin-Wu method — over 120 fasting, or post-prandial, two hours
 - B. Capillary blood sugar:
 1. Folin-Malmros method — over 120 fasting, over 140 after eating.
 2. True glucose value methods — over 120 fasting, over 140 after eating.

If the laboratory reports borderline values, verification should be made by further blood sugar determinations, or a glucose tolerance test, subsequent to three days of normal diet, containing a daily minimum of 250 Gm. of carbohydrate. If there is a complicating illness such as hyperthyroidism or infection, the confirmatory tests should not be performed until the illness has subsided. A family history is extremely important. Most diabetics are found where there is a positive family history.

IF A DIABETES DETECTION PROGRAM IS SET UP, HOW CAN YOU COOPERATE?

Most importantly, by testing your own patients. Test every patient who comes into the office during Diabetes Week. Try to test all patients once a year. Tell them of the importance of diabetes detection to themselves and the community, and advise them to have members of their families tested for glycosuria. Test all relatives of diabetics at all times, especially during Diabetes Week.

To improve the statistics on incidence, report to the Committee on Diabetes (of your Medical Society) the number of pa-

tients tested during Diabetes Week, the number showing glycosuria, and the number of these determined to be true diabetics.

You can also cooperate by offering your services to the Committee on Diabetes. It will need volunteers to give talks about the Diabetes Detection program — to businessmen, Parent-Teacher Associations, women's organizations, and other groups whose cooperation is essential if our unknown diabetics are to be guided to medical care. The services of physicians will be needed at testing centers, too.

HOW DOES THE MASS SCREENING PROGRAM GET PEOPLE TO THEIR PHYSICIANS?

Every individual tested is asked the name of his physician. If the test for glycosuria is negative, the individual is informed — and in some communities the doctor, too. If the test is positive, both are notified and the individual advised to see his physician for further examination. Sometime later there is a follow-up to help make certain that the advice has been or will be heeded.

The Diabetes Detection Drive can succeed only with the cooperation of the practicing physician. You are the first and main line of detection, as you are the first and only line of treatment. Your help is essential if unknown diabetics are to be brought under medical care and thus remain effective members of the community.

Our State Diabetic Society is called the Delaware Diabetes Association, which is the recently incorporated affiliate of the American Diabetes Association. The Delaware Diabetes Association has an active Committee on Diabetes Detection and Public Education, viz.; Dr. Leonard Tucker, Dr. Leroy R. Kimble, Dr. Wm. Thomas Hall, Dr. Harold A. Tarrant, Dr. Edward M. Bohan, Chairman, of Wilmington; Dr. Robert L. Klingel, Rehoboth Beach; Dr. J. R. Elliott, Laurel; and Dr. Floyd I. Hudson, Dover.

Any of these members will be glad to assist you during or before Diabetic Week, November 16 to 22. The address is the Academy of Medicine, Wilmington.

EXPERIENCES WITH PERCUTANEOUS NEEDLE BIOPSY OF THE LIVER*

NORMAN N. COHEN, M.D.,** WERNER J. HOLLENDONNER, M.D.,*** and
RALPH M. MYERSON, M.D.****

During the past three and one-half years 316 percutaneous needle biopsies of the liver have been performed on 300 patients hospitalized at the Philadelphia, Pennsylvania Veterans Administration Hospital. This paper summarizes our experiences with this procedure and attempts to correlate the biopsy findings with the clinical picture and the laboratory evaluation of liver function.

MATERIALS AND METHODS

The indications, contraindications, precautions and technique reported in the literature on previous occasions were followed¹⁻¹⁰. The Vim Silverman needle was used in all cases, and except for a few in-

stances, the intercostal, transthoracic approach was utilized. Exceptions to this approach were those cases in whom a large nodular mass presented subcostally or where it was desired to obtain tissue from the left lobe of the liver. Prior to the biopsy the patients were studied for bleeding tendencies and the prothrombin time was routinely checked. Following the biopsy the patient was kept at absolute bed rest for 24 hours during which time frequent blood pressure and pulse determinations were made.

RESULTS

The results of the effectiveness of liver biopsy are tabulated in Table I. Of the 316

TABLE I
RESULTS OF 316 PERCUTANEOUS NEEDLE BIOPSIES OF THE LIVER

Disease	No. Patients	Positive	Not Diagnostic	Failure of Procedure
Cirrhosis	105	91 (86.7%)	7 (6.7%)	7 (6.7%)
Metastatic Carcinoma	45	33 (73.3%)	10 (22.2%)	2 (4.4%)
Acute Hepatitis	31	21 (67.7%)	10 (32.3%)	0
Sarcoidosis	16	11 (68.7%)	4 (25%)	1 (6.3%)
Cholangiolitic Hepatitis	11	9 (82%)	1 (9%)	1 (9%)
Tuberculosis	9	5 (55%)	4 (45%)	0
Hepatoma	7	4 (57%)	3 (43%)	0
Hemochromatosis	6	6 (100%)	0	0
Chronic Hepatitis	4	3 (75%)	1 (25%)	0
Biliary Cirrhosis	3	2 (67%)	1 (33%)	0
Hemolytic Anemia	3	3 (100%)	0	0
Hodgkin's Disease	3	0	3 (100%)	0
Cholangioma	2	0	2 (100%)	0
*Misc. Liver Diseases	6	4 (67%)	2 (33%)	0
Total Liver Disease	251	192 (76.5%)	48 (19.1%)	11 (4.4%)
No Hepatic Disease	65			0
Total	316			11 (3.5%)

* Includes one case each of chronic lymphatic leukemia, chronic myelogenous leukemia, berylliosis, constitutional hyperbilirubinemia, histoplasmosis, liver abscess.

biopsies attempted there were 11 cases in which the procedure was classified as un-

successful due to failure to obtain liver tissue, inadequate liver tissue, laboratory accidents or the presence of foreign tissue in the biopsy specimen. This failure rate of 3.5% is in keeping with that reported by

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other workers^{2,11,12}. Sixty-five biopsies were performed in patients in whom the diagnosis of a normal liver was made. This group included a number of patients in whom abdominal or thoracic neoplasms were present and the presence of a normal liver was subsequently confirmed at operation or autopsy. Others in this group were patients with obscure diseases in whom a liver biopsy was done in an attempt to establish a diagnosis. Of the remaining 251 with hepatic diseases, liver biopsy was considered positive in 192 or 76.5%. A positive biopsy was defined as one which established the diagnosis or confirmed the previously made clinical impression. As noted in Table I a high yield of positive biopsies was obtained in patients with cirrhosis of the liver, metastatic carcinoma, viral hepatitis, cholangiolitic hepatitis, sarcoidosis and hemochromatosis.

The impressive results of this procedure in the diagnosis of focal lesions such as metastatic carcinoma of the liver have been reported repeatedly^{9,13,14}. In the present series, 73.3% of 45 biopsies were positive for metastatic neoplasm. Of primary neoplasms of the liver, 4 of 7 hepatomas were diagnosed by needle biopsies. Two cholangiomas were missed. A correlation of the results of liver biopsy with alkaline phosphatase determinations substantiates the value of the latter laboratory study in primary and metastatic neoplasms of the liver. In this group of patients, the alkaline phosphatase was elevated in 89%.

The value of liver biopsy was well demonstrated in the granulomatous diseases including sarcoidosis, tuberculosis, histoplasmosis and berylliosis. Positive tissue was obtained in 70% of this group. This coincides with the figures of others in this type of case^{1,15}.

Biopsy was positive in a high percentage of cases with diffuse parenchymatous diseases of the liver. Only 6.7% of successful biopsies were not diagnostic in patients with cirrhosis of the liver. In these cases the possibility of obtaining normal appearing tissue from a regenerating hepatic nodule should be entertained. Although 32% of biopsies in acute hepatitis were not considered to be diagnostic, many of these were

performed in the later stages of the disease when the acute pathological changes may well have disappeared. Of six cases of hemachromatosis the diagnosis was successfully established in all with the use of appropriate staining technique.

COMPLICATIONS

Hemorrhage was the only serious complication encountered. It occurred in two of the patients, one of whom developed a hemorrhagic pleural effusion following the biopsy procedure. This was treated by thoracentesis with an uneventful recovery. Serious intra-abdominal hemorrhage occurred in a 36 year old negro man with tuberculosis of the liver and jaundice of long duration. At emergency laparotomy, a 5 mm rent in the liver capsule was found. Recovery was uneventful. There were no fatalities in this group. In a review of 20,016 biopsies of the liver, Zamchek and Klausenstock reported an "adjusted" mortality of 0.085%¹⁶. Terry noted an incidence of significant hemorrhage in 0.2% of 7,532 biopsies¹⁷. In the present series, both patients whose biopsies were complicated by hemorrhage had normal prothrombin times and it was felt that unfortunate positioning and movement of the needle and/or the patient was responsible for the bleeding. In 25 patients whose prothrombin times range from 30 to 50% of normal, there was no instance of hemorrhage.

DISCUSSION

The value of various diagnostic tests should be reappraised from time to time and this was the primary purpose of this study. Any diagnostic procedure which carries a potentially significant morbidity or mortality should be carefully evaluated as to its usefulness in diagnosis from the standpoint of its use in a general hospital. The evaluation should be approached both from the viewpoint of safety and diagnostic accuracy. From the data presented, it is concluded that liver biopsy is a useful procedure in the diagnosis of cirrhosis of the liver, metastatic and primary carcinoma of the liver, viral hepatitis, cholangiolitic hepatitis, hemachromatosis and in the granulo-

matous disorders including sarcoidosis and tuberculosis. From the few cases studied, it appears to be of little or no benefit in the diagnosis of various lymphomata. In many patients, it has been of value in preventing exploratory laparotomies in patients with carcinoma. A negative biopsy for carcinoma, however, by no means excludes the possibility of a primary or metastatic neoplasm. Improvement in the percentage of positive biopsies may result from proper macroscopic examination of the biopsy tissue as advocated by Terry¹⁸ or by the use of I₁₃₁ labeled serum albumin as an aid in localizing focal lesions¹⁹.

This study confirms the findings of many others that needle biopsy of the liver is a valuable diagnostic tool. The hazard to the patient when the biopsy is performed by experienced personnel is very slight. The procedure increases the diagnostic accuracy by a significant percentage felt to warrant this risk.

SUMMARY AND CONCLUSIONS

The results of 316 percutaneous needle biopsies performed on 300 patients over a three and one-half year period has been presented and the results of the diagnostic value of this procedure tabulated.

Liver biopsy established the diagnosis or confirmed the clinical impression in 76.5% of patients with diseases of the liver. High degrees of positive results were obtained in cirrhosis of the liver, metastatic carcinoma, hepatitis, hemachromatosis and in the granulomatous diseases of the liver.

Two hemorrhagic complications were encountered. In one patient a bloody pleural

effusion treated satisfactorily by thoracentesis was encountered. In another, persistent intra-abdominal bleeding necessitated an abdominal operation. There were no fatalities.

The authors feel that percutaneous liver biopsy has proved to be of sufficient diagnostic value to warrant the relatively slight hazards of the procedure. A failure rate of 19.1% where liver biopsy was not diagnostic of the underlying diseases emphasizes that this procedure is no panacea in the diagnosis of liver disease. In such cases, other diagnostic measures or exploratory laparotomy are necessary.

REFERENCES

1. Christian, E. R.: The Value of Biopsy of the Liver, *Am. J. Gastroenterol.* 25:253, 1956.
2. Cogswell, R. C., Schiff, L., Safdi, S. A., Richfield, D. F., Kumpe, C. W., and Gall, E. A.: Needle Biopsy of the Liver, *J.A.M.A.* 140:385, 1949.
3. Davis, W. D., Scott, R. W., and Lund, H. Z.: Needle Biopsy of Liver, *Am. J. M. Sc.* 212:449, 1946.
4. Hoffbauer, F.W.: Needle Biopsy of the Liver, *J.A.M.A.* 134:666, 1947.
5. Kleckner, M. S., Jr.: Needle Biopsy of the Liver: an appraisal of its diagnostic indications and limitations, *Ann. Int. Med.* 40:1177, 1954.
6. Kumpe, C. W., Gall, E. A., Schiff, L., Molle, W. E., Safdi, S. A., and Steinberg, H. H.: Needle Biopsy of Liver; general considerations, *Gastroenterology* 9:672, 1947.
7. Rossett, N. E.: The Status of Liver Biopsy, *Am. J. Gastroenterol.* 25:33, 1956.
8. Shorov, V. M., and Blumberg, J. M.: Indications for Liver Biopsy, *J.A.M.A.* 151:1070, 1953.
9. Schiff, L.: The Clinical Value of Needle Biopsy of the Liver, *Ann. Int. Med.* 34:948, 1951.
10. Topp, J. H., Lindert, M. C. F., and Murphy, F. D.: Needle Biopsy of the Liver, *Arch. Int. Med.* 81:832, 1948.
11. Stephenson, S. L., Jr., and Posey, E. L., Jr.: Liver Biopsy as a Diagnostic Modality, *Mississippi Doctor* 34:212, 1957.
12. Ward, J., Ulevitch, H., and Schiff, L.: The Diagnostic Value of Needle Biopsy of the Liver, *Gastroenterology* 28:34, 1955.
13. Beman, F. M., Brown, D. B., and Delor, C. J.: Experiences with Needle Biopsy of the Liver, *Am. J. Gastroenterol.* 26:275, 1956.
14. Cernock, W. F.: Needle Liver Biopsy; for the diagnosis of neoplasm, *Am. J. Digest. Dis.* 22:71, 1955.
15. Mather, G., Dawson, J., and Hovle, C.: Liver Biopsy in Sarcoidosis, *Quart. J. M.* 24:331, 1955.
16. Zamchek, N., and Klausenstock, O.: Liver Biopsy (concluded). II. The Risk of Needle Biopsy, *New England J. Med.* 249:1062, 1953.
17. Terry, R.: Risks of Needle Biopsy of Liver, *Brit. M. J.* 1:1102, 1952.
18. Terry, R. B.: Macroscopic Diagnosis in Liver Biopsy, *J.A.M.A.* 154:990, 1954.

MENTAL REHABILITATION OF THE PATIENT WITH MYOCARDIAL INFARCTION

ANTHONY R. TORTORA, M.D.*

The increasing incidence of myocardial infarction and the frequent recovery of such patients are producing a new responsibility for the medical practitioner: rehabilitation of the coronary patient. A discussion of treatment of coronary attacks should emphasize the need for emotional readjustment. This subject was stressed in an earlier paper which considered the hazards of prolonged bed rest.¹

Coronary arterial disease is primarily a chronic process and our concern should be for more than just the treatment of acute phases of myocardial infarction. Medical management of acute aspects of the "heart attack" is so exciting to the physician that the psychological handling may be overlooked. However, he must make a concerted effort to restore the patient to a full life. This is complete rehabilitation. One of the essential aspects of rehabilitation is the prevention of psychologic invalidism. The physician plays an active role in the genesis of invalidism. Since a patient recovered from an acute "heart attack" can be employed again, the need for averting iatrogenic psychologic crippling is even more cogent².

Despite an increase in the number of coronary attacks, more patients survive. This is due to a better understanding of cardio-vascular physiology and the basic mechanisms which produce coronary disease. Therefore, a greater need exists for psychologic handling of these patients.

The thought of a "heart attack" brings fear to the mind of the patient. Later, it creates a new way of life to which the patient must adapt himself. He may live a

long time and needs to be encouraged to find useful activity and to maintain an interest in life. The attending physician should not be helpless in this situation. Nor should his help consist of a few sympathetic and encouraging words. Important from the onset is an encouraging attitude on the part of both the physician and the family, and a hopeful attitude on the part of the patient. The patient who has had a coronary attack should be started on a rehabilitation program promptly.

The readjustment of most patients can be accomplished with the help of the family physician and the family. This can be achieved only by good rapport, i.e., doctor-patient relationship from the onset.³ The patient should have a minimum of resistance and a maximum of genuine co-operation. Excessive or unwarranted reassurance and early promises seldom fool the patient. Maximum long range benefit can be achieved only if the physician treats his patient as a totally integrated, bio-psychosocial entity. This requires not only the knowledge of the basic medical science but also a sensitivity to the subtle manifestations of the patient's attitude and awareness of the interpersonal processes which function between him and the patient. The physician who is sufficiently mature in his interpersonal orientation will remain objective although he may react towards his patient with sympathy, concern, admiration or even, at times, with justifiable anger.⁴ It must be remembered that the psyche and soma are biologically one and that there can be no dichotomous arrangement between mind and body.

Total patient therapy includes control of emotional factors. Fundamental to successful rehabilitation is the patient's willingness

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to follow his prescribed regimen. Frequently, due to fear and anxiety, the patient begins to doubt his ability to recover. Or he may refuse to accept the reality of his disease. In calming the patient and providing a sense of security, means should be employed to facilitate a normal perspective. Although fear and anxiety are universal phenomena, their meanings are completely personal and the reaction of the sufferer is the essential guide to care. Some patients can be made to accept the condition philosophically with an optimistic outlook and may proceed smoothly and rapidly. Other patients may proceed at a slower pace.

The physician directs but also must manage the patient for years. It usually is not desirable to tell the patient the extent of the "attack"; on the other hand one should not minimize it. This depends on the sensitivity and vulnerability of the patient but he should be made to realize that he has a chronic condition which will require frequent observation and psychotherapeutic help.

Many devices must be employed in order to bring a proper psychotherapeutic approach to emotional disturbances as they arise. Gentleness and delicacy have been stressed by many. However, over-sympathetic understanding may retard therapeutic progress. Achievement of effective readjustment does not demand cruelty, but it does require a masculine type of firmness.⁵ The physician who gives willingly of his time for ample discussion not only is fulfilling a professional obligation but also is employing a potent therapeutic tool. Regardless of the intelligence or outward calmness of a patient, an element of trepidation always underlies the "attack." Moreover,

the patient has some psychologic regression so that the physician assumes a dominant position and his relationship to the patient tends to resemble the child-parent relationship of the patient's earlier years. Detailed explanations, given unhurriedly and genuinely, are essential if the patient is to derive the fullest benefit. This approach can serve many purposes. Misunderstanding is avoided and full co-operation is encouraged; fear and anxiety are lessened; a close patient-physician rapport is established and the physician's understanding, sympathy and patience are helpful in avoiding iatrogenic disease.

With this in mind, what advice should be given a patient in regard to activity? It is well-documented that almost as many attacks of myocardial infarction occur when the patient is at rest as when he is exerting himself. I see no justification for prohibiting all exertion. I believe the patient should be allowed those activities which do not cause chest discomfort and dyspnea. The presence of symptoms will determine how nearly normal his life may be.

Successful rehabilitation, therefore, depends largely on the ability of the attending physician to control, neutralize and perhaps eliminate the anxiety and fears of the "heart attack" by the inculcation of the positive virtues of optimism, hope, and courage.

REFERENCES

1. Tortora, A. R.: Acute myocardial infarction, *Med. Times* 86:700 (June) 1958.
2. Hellerstein, H. K., and Goldston, E.: Rehabilitation of patients with heart disease, *Postgrad. Med.* 15:265, 1954.
3. Tortora, A. R.: The art of effective medical treatment, *Res. Phys.* To be published.
4. Rubenstein, H. S.: Physician know thyself, *Current Med. Dig.* (May) 1958.
5. Boyer, N. H.: Coronary occlusion, *Med. Clin. N. Amer.* (Sept.) 1946.

MEDICAL COURT CASES



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"AUTHORIZATION FOR EXTENT OF OPERATION"

BANG VS. CHARLES T. MILLER HOSPITAL AND DR. FREDERIC E. B. FOLEY

Supreme Court of Minnesota 88 N. W. 2d 186

This was an action for damages for an alleged assault or unauthorized operation by Dr. Frederic E. B. Foley on Helmer Bang, the plaintiff-patient. The District Court of Ramsey County, Minnesota, entered an order denying the plaintiff's alternative motion to vacate dismissal of his action or for a new trial, and he appealed. The Supreme Court of Minnesota reversed the order of the lower court and granted a new trial.

Helmer Bang began having urinary trouble. He consulted a doctor in his home town of Austin, Minnesota, who sent him to the hospital for a cystoscopic examination which was made by two local doctors in Austin. Bang testified that they informed him of an enlargement of the prostate gland and bladder soreness and recommended either Rochester or Dr. Foley in St. Paul.

Bang consulted with Dr. Foley at the latter's office in St. Paul. Dr. Foley testified that at that time the patient complained of diminished size and force of the urinary stream and increased frequency of urination. He said that the patient described various urinary symptoms and that a rectal examination of the prostate was performed. Not being certain at that time of the exact nature of the patient's ailment, Dr. Foley informed the patient that he wished to make a cystoscopic examination the follow-

ing day and suggested that the patient be admitted to the Charles T. Miller Hospital in St. Paul for further investigation, which was done. He said that he informed his patient "that the purpose of his going into the hospital was for further investigation with a view to making a prostate operation if the further examination showed that that was indicated."

The important question for determination was whether the evidence presented a fact question for the jury as to whether the patient consented to the severance of his spermatic cords when he submitted to the operation. Dr. Foley testified on cross-examination that he did not tell the patient at the time of the office visit that any examination he had made or was going to make had anything to do with the spermatic cords, nor did he recall explaining to the patient what a prostate gland operation involved. He also said that the patient's life was in no immediate danger because of his condition on that day.

When questioned as to whether he had any conversation with Dr. Foley at the operating table or during the entire period when he was in the operating room, Bang replied that with the exception of a morning greeting "and stuff like that" nothing was said to him with reference to the opera-

(Continued on page 302)

+ Editorials +

DIABETES DETECTION WEEK

There are many diseases, cancer and coronary artery disease being two outstanding examples, about which our knowledge of prevention and treatment is meager. It behooves us, therefore, to make good use of every known diagnostic and therapeutic aid for conditions about which our knowledge is more abundant. One of these conditions is diabetes.

The Delaware Diabetes Association is

undertaking a commendable program of education, both public and professional. The professional portion of this program is more of a reminder than an introduction of new material. While one week each year is set aside as Detection Week, the Society urges physicians to be at all times alert to the possibility of this disease as a diagnosis.

It seems to be the same old story of "not looking" rather than "not knowing."

ATOMS FOR PEACE

The benefits of having a Radioactive Isotope Laboratory in the community are many. At first thought, one might consider this laboratory merely as an adjunct in the treatment of malignant disease. While it is of definite value in this field, that is only a small portion of its full value.

It has now become indispensable in the diagnosis and treatment of diseases of the thyroid gland. By the same token it is of value in the treatment of several types of heart disease. New methods are being described almost daily and it is obvious that this branch of medicine is rapidly growing and has far to go in the future.

IATROGENIC DISABILITY

It is pathetic to see a patient recover from a severe illness such as an infarct of the myocardium and then spend his remaining days in a state of inactivity and fear because of fear on the part of the attending physician. Much has been written on the subject of rehabilitation. Nowhere in medicine is rehabilitation more important than in the patient who has had a heart attack. While we sometimes think of rehabilitation as the procedures prescribed

during the period between the end of the acute illness and the patient's return to a normal life, it really is an essential part of treatment that should begin at the onset of the illness. The attitude of the physician can be a factor that determines success or failure. As Axel Munthe stated: "... there is no drug as powerful as hope ... the slightest sign of pessimism in the face or words of a doctor can cost the patient his life".

tion. The patient admitted that he did not expect to tell the doctor what to do; that he had faith in him; and that he did not expect to tell him how to perform the operation. He said that he expected the doctor would operate to do what was necessary to right and cure his condition. He testified that he did not ask the doctor what he in-

tended to do and left it up to him to do the right thing.

The Supreme Court of Minnesota held that the question as to whether the patient consented to the severance of his spermatic cords was a fact question for the jury and that it was error for the lower court to dismiss the action.

"CORRECTIVE MEASURES NECESSITATED BY AN OPERATION"

HOPKINS VS. UNITED STATES

District Court of the United States for the Western District of Missouri 152 F. Supp. 473

This was a malpractice action under the Federal Tort Claims Act. Since early childhood the plaintiff-patient had a disease known as fibrous dysplasia involving the right frontal area of her head. The disease was progressive and caused a marked thickening of the right frontal bone, pressing on the right optic nerve and the right orbit, causing a partial loss of vision.

She was admitted to the Veterans' Administration Hospital in Kansas City, Missouri, and after extensive investigation and examination, it was concluded that surgery was necessary to relieve the pressure on the optic nerve and retard the failing visual acuity of the right eye. It was concluded that the operation was to be a craniectomy, a piece-meal removal of the affected bone of the frontal area, to relieve pressure on the optic nerve and to remove pressure on the brain. There were to be at least two operations, the first to remove the diseased bone and to make a mold of the defect in the

skull, and the second to install a metal plate which would be made from the mold taken during the first operation. The proposed operative procedure was discussed fully with the patient, she agreed to the operation, and she was consequently operated upon.

The patient contended that the operating surgeon negligently placed the metal plate below the right supra orbital ridge, causing pressure and inability to close the right eye. Subsequently, the necessity for correction and readjustment of the plate became manifest.

The Court, in holding the doctor not liable, declared: "Negligence cannot be inferred simply . . . from the fact that the metal plate may have required subsequent adjustment. . . . While I am not persuaded that the operations were unsuccessful for the purposes for which they were intended, even an unsuccessful result is not evidence of negligence."

STATE SOCIETY PLANS INSTITUTE ON PREMATURE CARE

An all-day session on care for the premature infant will be held Wednesday, December 3, at the Alfred I. du Pont Institute near Wilmington. Sponsored jointly by the Committee on Education of the Medical Society of Delaware and by the State Board of Health, the program will feature faculty from the New York Hospital, Cornell Medical Center, headed by Dr. Murray Davidson. Discussions will include practical and theoretical implications of feeding, anemias, infections, including staphylococcal infection, resuscitation and environ-

mental control. There will be, in addition, demonstrations and discussions of special equipment.

Because of the team aspects of premature care, the program will be designed both for physicians and for nurses involved in this work. We hope that doctors and hospitals will make a special effort to encourage nurses to attend. All physicians in the Society, as well as all house staff members, will receive formal announcements of the program within the next few days.

PLEASE HELP IN SCREENING MATERNAL DEATHS

The work of the Medical Society of Delaware's Committee on Maternal and Infant Mortality is generally conceded to be valuable, particularly its detailed review of all deaths involving pregnancy or the newborn. This task, difficult already, is further complicated by the occasional failure of some physicians to specify that pregnancy existed when filling out death certificates in cases in which the direct cause of death

was unrelated to the condition. This means that the Bureau of Vital Statistics, which refers maternal deaths to the Committee for study, is unable to pick up these cases. Since the criteria of the study call for review of all deaths of all expectant mothers, regardless of cause, the Committee asks that you note pregnancy on the death certificate whenever it exists, regardless of its role in the patient's death.

REPORT OF INTERNATIONAL MEDICAL MEETING

ALLEN C. WOODEN, M.D.

This is a first hand report of the XVIth International Congress of the History of Medicine. This year's Congress took place at Montpellier, France, from the 22nd to the 28th of September. The Congress members were guests of the Medical School of the University of Montpellier, one of the oldest medical schools in the world. The official language of the Congress was French, but this did not make too great a language barrier, since most of the members spoke more than one language.

Our host, the medical faculty of Montpellier, were most hospitable, making our stay enjoyable with many invitations to the governing bodies of the town, the mayor, chief of City Council, the Chamber of Commerce, etc. The members were also invited to the private homes (chateaux) of the Viscount and Viscountess de Soporta for a wonderful musical evening. The faculty also arranged historical side trips to cover almost the entire area immediately surrounding the charming ancient city of Montpellier.

Many of the delegates were outstanding men in medical fields other than medical history. Present among the distinguished guests were outstanding surgeons, psychiatrists, internists, dermatologists, etc. Representing the United States were nine physicians, two librarians, and one historiographer.

The papers presented at the Congress were in general of a superior quality and reflected a tremendous amount of personal research on the part of the authors. All of the European countries sent representatives, Russia being represented by six outstanding medical historians.

The topics covered reflected the medical background of Montpellier and the medical school's contribution to development of great clinical teachers and clinical hospitals throughout Europe and France in particular.

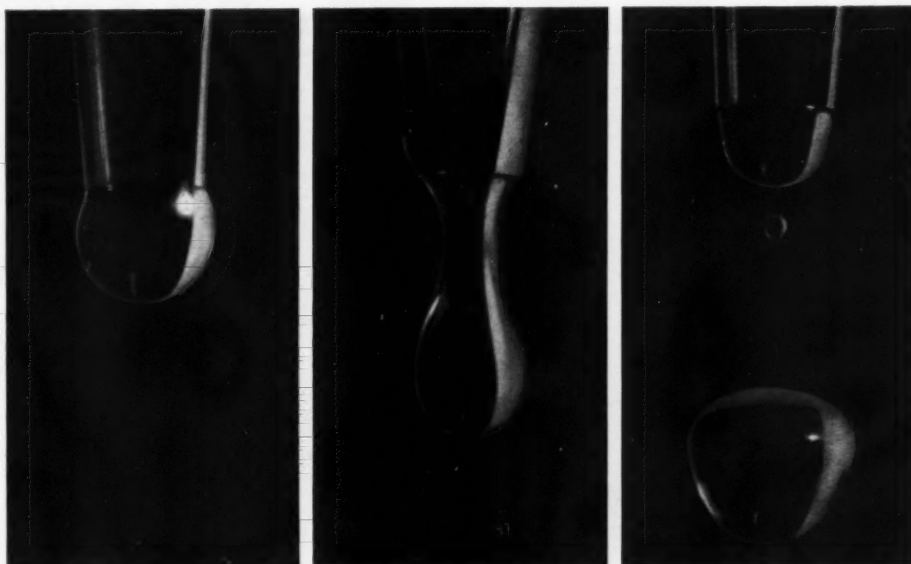
From a personal viewpoint, the greatest

value of this meeting was the friendly feeling of all the delegates and their willingness to share ideas. The history of medicine is merely a study of the growth of ideas dealing with human ills and their treatment through the ages.

How would you like to spend about a week in the middle ages? Well I did and found it most enlightening. As a historian I have spoken many times of the Monastery herb gardens, the life living conditions of the people of the walled cities, the poor sanitation, etc. Now it is with a feeling of *having been there* that I can adequately describe the beauty of the medieval abbey with its well kept herb gardens (where simple Galenical pharmaceutical drugs were grown and prepared). I can feel that presence of many thousands of people crowded in the poorly lighted and ventilated walled cities with their massive gorgeously decorated central cathedrals, the ghetto with its towers, iron gates, the narrow streets, university towns with their educational buildings usually surrounding a great Cathedral Church — this is enough of the middle ages!

Now for a description of the medical school—Montpellier has all modern buildings for its teachings, retaining many of the old structures for a reminder of the long-dead grandeur of the past. The library is magnificent and it contains many of the original first editions of the incunabula. A unique feature of the school is a joint anatomical museum containing the anatomical preparations, sculpture, and collection of many distinguished medical graduates.

In conclusion, may I say that a complete resume of all the papers delivered at the Congress may be found at the Delaware State Medical Library. Any one sufficiently interested in the historical ascent may consult me personally concerning pictures of all the medieval institutions described in this report.



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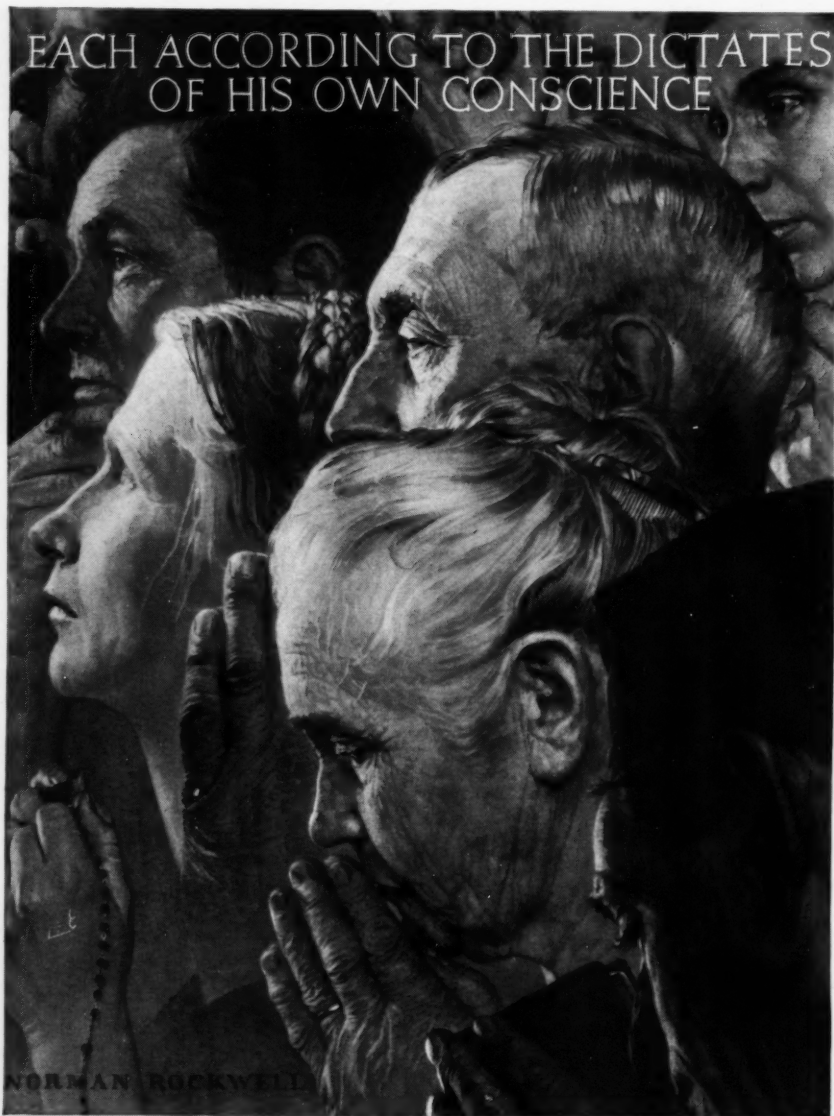
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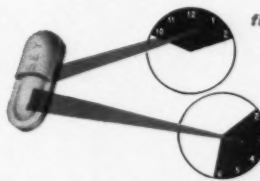
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2. Baird, H. W., III: A comparison of Meprospan
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References: 1. Spies, T. D., et al.: J.A.M.A. 159:645, 1955. 2. Spies, T. D., et al.: Postgrad. Med. 17:1, 1955. 3. Gelli, G., and Della Santa, L.: Minerva Pediat. 7:1456, 1955. 4. Guerra, F.: Fed. Proc. 12:326, 1953. 5. Busse, E. A.: Clin. Med. 2:1105, 1955. 6. Sticker, R. B.: Panel Discussion, Ohio State M. J. 52:1037, 1956.

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REFERENCES: 1. Carlozzi, M.: *Ant. Med. & Clin. Therapy* 5:146 (Feb.) 1958. 2. Welch, H.; Wright, W. W., and Staffa, A. W.: *Ant. Med. & Clin. Therapy* 5:52 (Jan.) 1958. 3. Marlow, A. A., and Bartlett, G. R.: Glucosamine and Leukemia. *Proc. Soc. Exp. Biol. & Med.* 84:41, 1953. 4. Shalowitz, M.: *Clin. Rev.* 1:25 (April) 1958. 5. Nathan, L. A.: *Arch. Pediat.* 75:251 (June) 1958. 6. Cornbleet, T.; Chesrow, E., and Barsky, S.: *Ant. Med. & Clin. Therapy* 5:328 (May) 1958. 7. Stone, M. L.; Sedlis, A., Bamford, J., and Bradley, W.: *Ant. Med. & Clin. Therapy* 5:322 (May) 1958. 8. Harris, H.: *Clin. Rev.* 1:15 (July) 1958.

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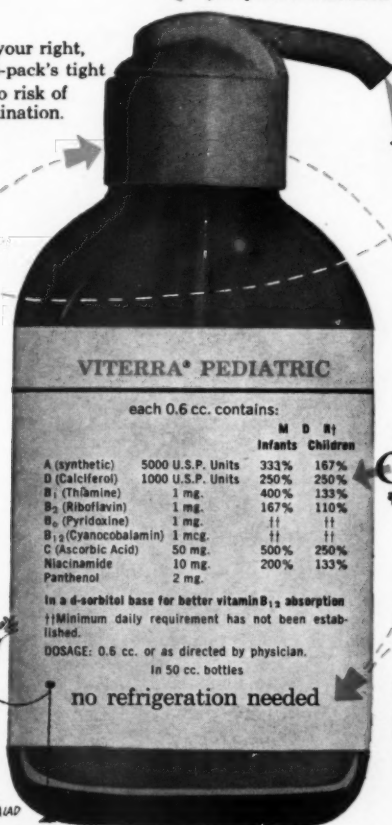
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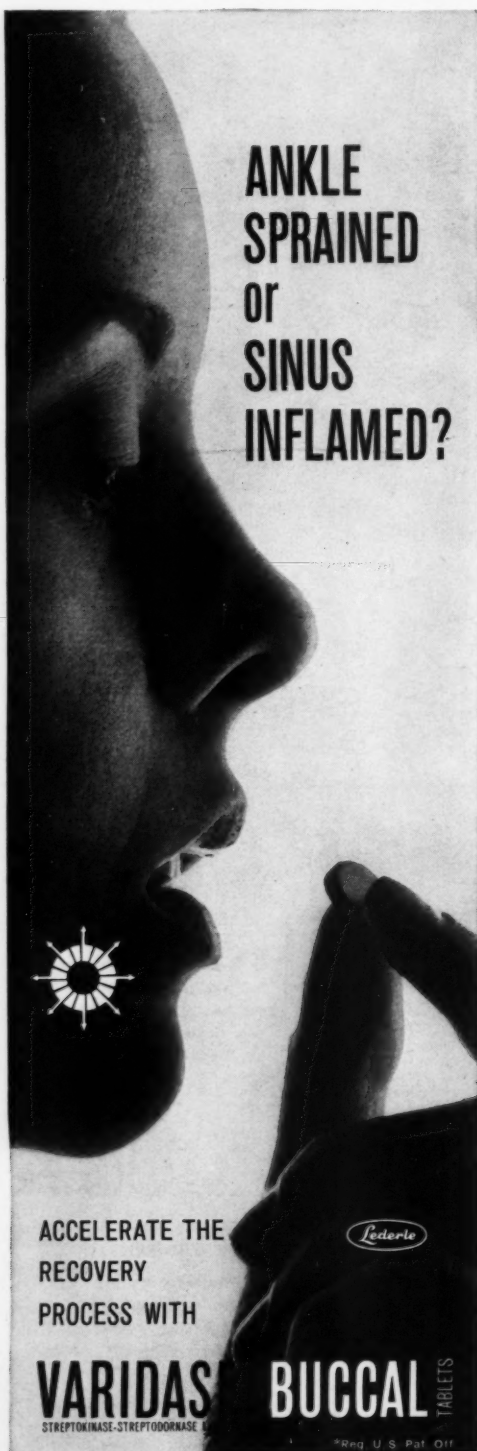
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- * 1. Welsh, A. L., and Ede, M.: J.A.M.A. 166:158, 1958.
2. Bleiberg, J.: J.M. Soc. New Jersey 33:37, 1956.
3. Abrams, B. P., and Shaw, C.: Clin. Med. 3:839, 1956.
4. Bleiberg, J.: Am. Practitioner 8:1404, 1957.
5. Clyman, S. G.: Postgrad. Med. 21:309, 1957.

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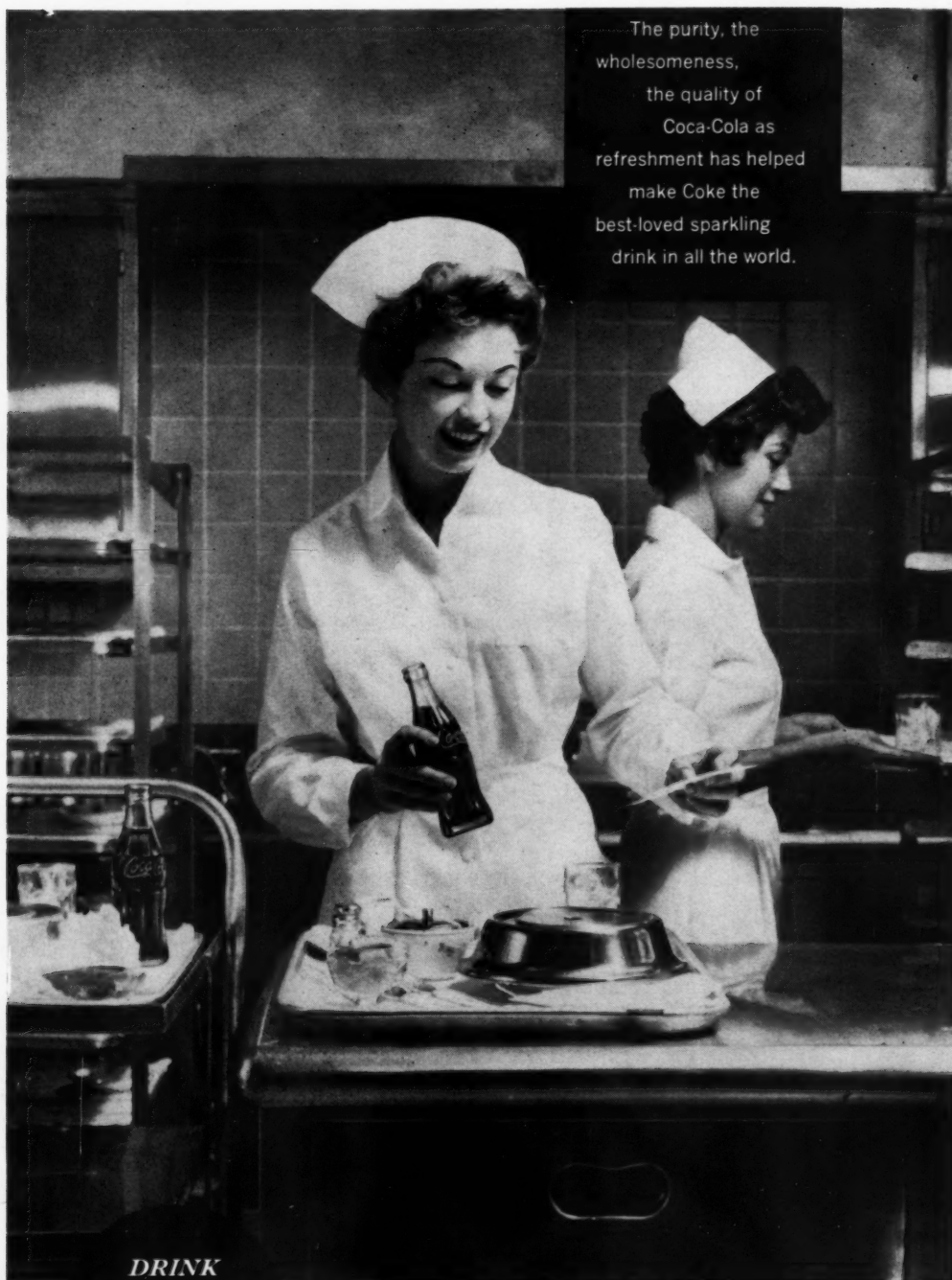
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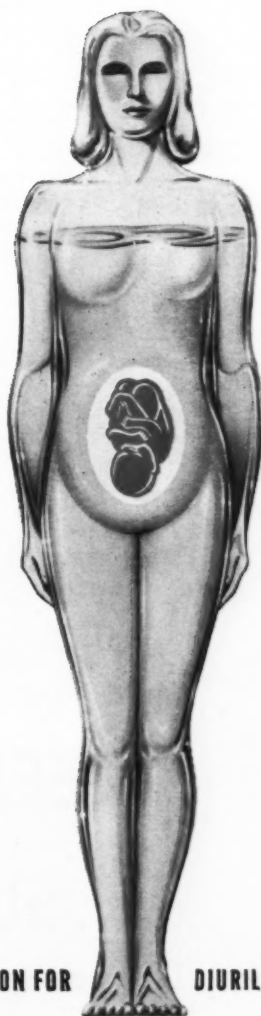
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1. Griebble, H.G., and Jackson, G.G.: Prolonged Treatment of Urinary-Tract Infections with Sulfamethoxypyridazine. *New England J. Med.* 258:1-7, 1958.
2. Editorial: *New England J. Med.* 258:48-49, 1958.

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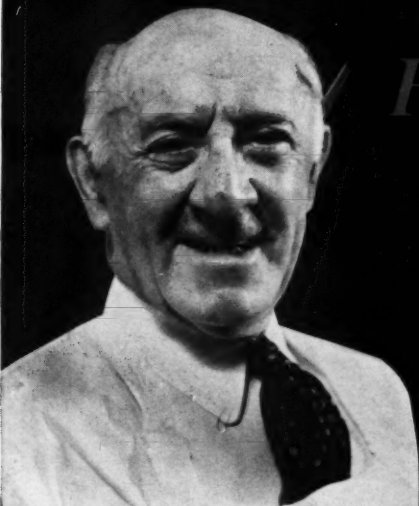
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Ford, R. V., and Moyer, J. H. Rauwiloid
Toxicity in the Treatment of Hypertension,
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